The ALPHA Collection

Instruction Manual

Model AL357i-B Alpha Inset Boiler

Multi Fuel and Wood Burning Inset Boiler Stove

Published September 2012

Please note This appliance has been independently CE tested and approved for the burning of wood and multi fuels and must, at all times, be used in accordance with these instructions to ensure safe and efficient operation.

You will need to refer to the serial number of your stove should you ever need to make a claim under the Alpha Warranty**.** You will find the serial number, beginning with AL, on the CE plate at the rear of the stove as well as on the lid of the outer packaging.

Write the date the stove was delivered to you below as this is likely to differ from the purchase date.

Remember to keep your receipt as proof of purchase.

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Ref: AL357i-B / UK-NI-ROI / V1.01-09-12

www.alphastoves.com

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INTRODUCTION

Thank-you for purchasing the Alpha Inset Boiler stove. We are confident that it will warm your home even on the coldest winter days and provide you with many years of pleasurable heat.

Before you install or operate your inset boiler stove however, in the interests of safety, please read this booklet which contains important safety advice as well as instructions which will help you make the most of your new boiler stove.

All users of this stove should be aware of the contents of this handbook. If other people are going to operate the stove then please keep this booklet handy so that it can always be quickly referred to. Never let anyone use the stove who is unfamiliar with its correct operation.

IMPORTANT

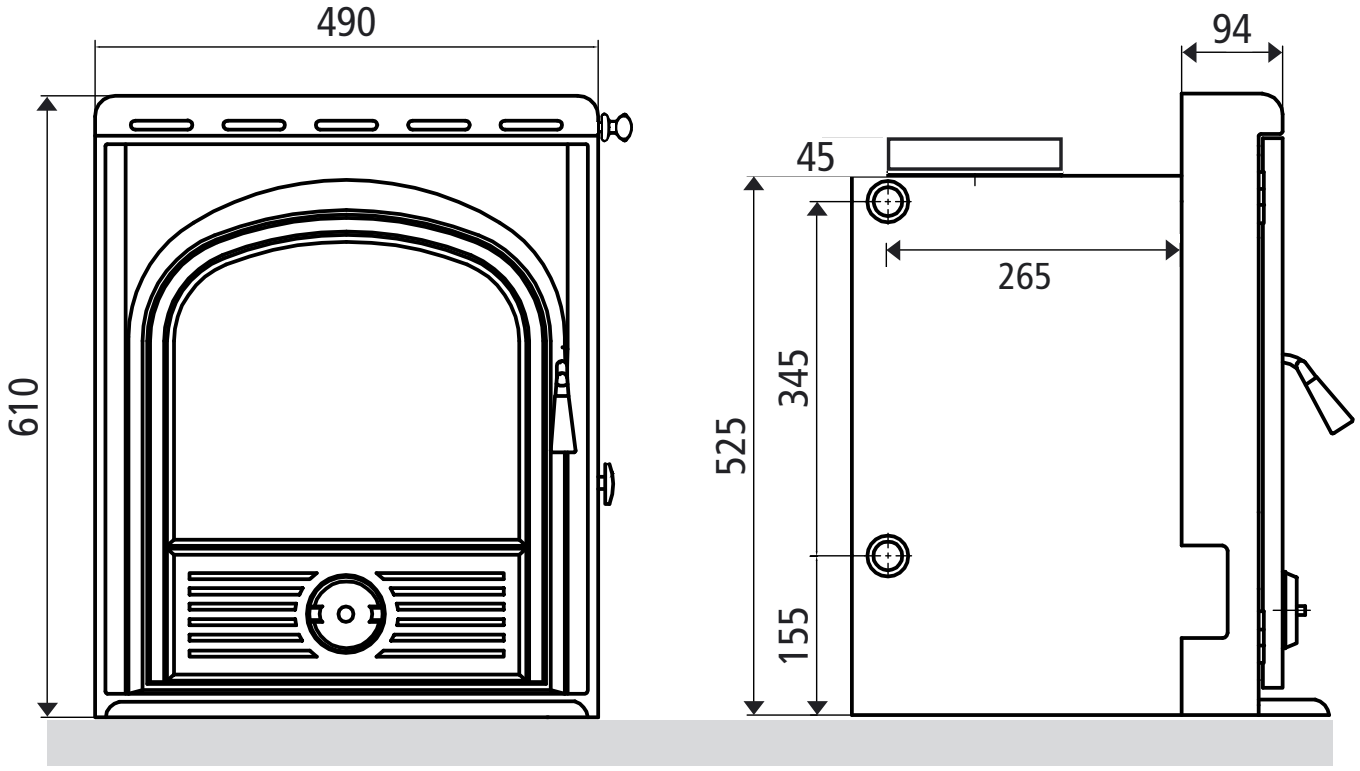
Even if you have installed or operated stoves before, remember manufacturer's requirements can vary and can also change with updates to building regulations. If you are installing this stove in a UK Smoke Control Area the Alpha Inset Boiler can only be fuelled with approved smokeless fuels – it will be illegal to burn wood in it.

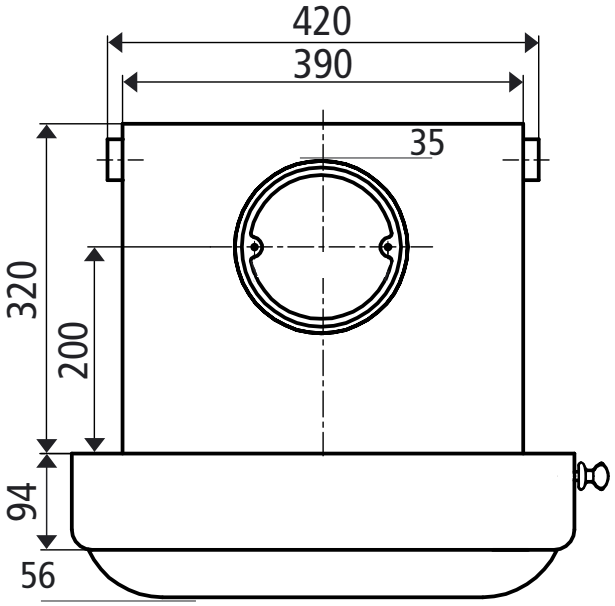
PLEASE NOTE

This instruction manual is also used for a number of other inset stove models in the Hi-Flame product range and therefore some of the stove photographs and diagrams used, which are used for guidance purposes only, may differ slightly from your new Alpha Inset stove. However, the principles illustrated here remain the same.

Hi-Flame Fireplace (UK) Limited

GENERAL DIMENSIONS





All sizes in mm

GENERAL SPECIFICATION

Model Name	**Alpha Inset Boiler**
Model Number	**AL357i-B**
Dimensions (mm): Facia	H**605** W**490** D **95**
Dimensions (mm): Firebox External	H**515** W**380** D**175**
Net Weight	**109 kg**

PERFORMANCE

From Kiwa GasTec BS EN13229: 2001 Test Aug 2012

WOOD

Intermittent Burning – 1.0 hour refuel period

Nominal Heat Output	To Room	**4.8 kW**
	To Water	**7.5 kW**
	TOTAL	**12.3 kW**
Efficiency (net)		**80.2%**
Mean CO Emission (at 13%)		**0.52%**
Mean Flue Gas Temperature		**296°C**
Flue Gas Mass Flow		**7.0 g/s**

MINERAL FUELS (Ancit)

Continuous Burning – 2.0 hour refuel period

Nominal Heat Output	To Room	**3.7 kW**
	To Water	**8.9 kW**
	TOTAL	**12.6 kW**
Efficiency (net)		**75.8%**
Mean CO Emission (at 13%)		**0.47%**
Mean Flue Gas Temperature		**333°C**
Flue Gas Mass Flow		**7.6 g/s**

MINIMUM DISTANCES

Minimum Distance from Combustible Materials

Top (shelf)	**200 mm**
Sides	**100 mm**

FLUE

Flue configuration	**top only**
Flue outlet diameter	**150 mm (6")**
Minimum flue height from top of Inset	**4,500 mm (15')**

BOILER

Factory pressure tested to 3.5 Bar maximum

Water capacity	**10kg / 10L (2.2 Gal)**
Maximum operating Pressure	**<1.5 Bar**
Pipework ports	**Four x 1" BSP**

RECOMMENDED FUELS

Wood Logs: Moisture content	**<20%**
Maximum Wood Fuel Load	**3.6 kg (approx 8 lb)**
Maximum Log Length	**275 mm (11")**

Or Approved Smokeless Fuels (www.solidfuel.co.uk)

Maximum Mineral Fuel Load **3.7 kg (approx 8 lb 2 oz)**

REPLACEMENT CONSUMABLES

Heat Resistant Glass	**285 x 325 x 4 mm**

Door Rope Seal **10 mm dia x app 1700 mm (5'8") long**

Ash Pit Rope Seal **10 mm dia x 370 mm (15") long**

NB There are no firebricks on the Alpha inset Boiler

STANDARD FEATURES

1 Primary Air Control Air which enters under the grate for multi fuel burning and to assist a wood log fire to get started

2 Secondary Air Control Air which enters at the top of the fire chamber to ensure a cleaner burn and effective wood burning (pull out to open)

3 Airwash System Part of the secondary Air control system which diverts hot air down along the front of the glass to burn off unwanted sooty particulates and help keep it clean

4 Thermostat Control This adjusts the temperature of the water leaving the boiler from low to high by controlling part of the combustion air supply to the fire chamber

4 System Ports There are four 1" BSP water ports – two on either side of the firebox

IMPORTANT SAFETY ADVICE

• Ensure that an approved carbon monoxide detector (BS EN50291:2001) is fitted in the same room as the stove. It should be powered by a battery designed for the working life of the alarm. *Please note* this is now a requirement under UK Building Regulations.

• External surfaces including the fire chamber door and operating handles, windows and stove bodywork will become extremely hot. Always use the tool provided and avoid touching these parts of the stove without proper protection, such as heat-resistant gloves or other protective aids.

• Potentially combustible material or objects such as soft furnishings should never be left on or near any of the stove's hot surfaces. Ensure that wood supplies and log baskets are kept at a safe distance from the stove. *See Minimum Distance to Combustibles page 3*

• Never leave children unattended in the room where your stove is being operated. Ensure that children are aware of the potential danger and make sure that they keep clear of the stove when it is in operation. Where children, the elderly or the infirm are present always use an approved safety fireguard (BS6539) to prevent accidental contact with the stove.

• This stove should *not* be fitted in a room with an extractor fan (eg kitchen) as this will adversely effect the air quality in the room and could be dangerous for the room's occupants. It will also starve the stove of combustion air and reduce the stove's efficiency.

• To ensure your safety make sure that your stove's installation complies with all local, national and European building regulations' ventilation requirements. Low energy houses have their own particular requirements and should be strictly adhered to.

• Do not use flammable liquids to ignite the fire. In the confined space of the stove's fire chamber there is a real potential to cause a life-threatening flash flame or explosion.

• Never over-fire the stove. If any external parts of your stove glow red during operation then immediate action should be taken to reduce the supply of combustion air to the fire chamber through the Primary and Secondary Air controls which should quickly limit the intensity of the fire.

• This stove is CE approved and tested to EU EN13229 standards in the United Kingdom by Kiwa GasTec at CRE of Stoke Orchard, Gloucestershire. Alterations to its construction could be potentially dangerous and will also render your product warranty void.

• Do not use aerosol products in the vicinity of the stove when it is in use.

• Check and clean the stove's flue way and the top of the baffle plate regularly to help avoid potential blockages.

• Clean your chimney regularly.

BOILER STOVE SYSTEMS – SPECIFIC SAFETY ISSUES

• This stove requires a dedicated non-closable air vent of the appropriate size for its maximum heat output and this should be located in the same room as the stove. An adequate supply of combustion air is essential for the safe operation of this stove – see page 5 for maximum outputs.

• The system should not rely solely on gravity fed circulation but must also incorporate a circulation pump.

• This stove should not be connected directly to a sealed or pressurised system without including a safety 'buffer' between the systems such as a thermal store, heat exchanger or specialist link-up component. This will also help neutralise any pipe size difference between the two systems which could adversely affect performance.

•The cold feed and open vent flows must not be fitted with any manual or automatic valve. The system flow must not be able to be 'closed off' so that there is always a clear flow route from the stove to the system's open vent

• In the event of a power cut or circulation pump failure your stove will continue to produce hot water which could be potentially dangerous. Your system design should therefore provide for the safe dissipation of excess hot water through a heat loss or heat leak radiator.

• Motorised valves must revert to the open position in the event of a power failure. This will allow heat to be safely dissipated through the system's natural gravity circulation process.

• Although it is common practice for heat leak radiators to be located in an upstairs bathroom it is worth noting that on some boiler stove systems the heat leak radiator can get very hot and therefore we recommend installing a low surface temperature type radiator and / or locating it where young children or the infirm won't accidentally come into contact with it

• The heat output to water from this boiler stove must not be significantly greater than any potential usage. The system's heat release feature, especially if linked, must be sufficient to prevent the system from over-heating.

• The system design must incorporate a drain point, preferably near the boiler stove, and be sufficient to empty the system of any residue water during maintenance or removal.

• All electrical connections, for example to system valves, the circulating pump and the link-up component must comply with current Building Regulations. Ensure that the pipework is correctly earthed. See page 7 for relevant regulations.

• The mains water connection to the system must

comply with local water authority regulations in order to safeguard water quality and public health – see page 7.

• The hot water cylinder thermostat should be set at 60ºC (and tested) to prevent scalding – see page 20.

ASBESTOS

This stove does not contain Asbestos. However, check that there is no possibility of disturbing any asbestos based materials during its installation. You may intend removing an older appliance prior to installing your new stove, and you should be aware that the old appliance or installation could incorporate heat protective asbestos sheet – if in doubt seek guidance at *www.hse.gov.uk/asbestos* – do not underestimate the potential dangers of Asbestos.

FIRE CEMENT

Prolonged contact with fire cement and skin should be avoided. Protective gloves and glasses should be worn when applying fire cement. Care should also be taken to avoid contact between the stove's surfaces and fire cement as this will damage the paintwork. Any excess fire cement should be quickly removed before it hardens. Always follow the manufacturer's instructions.

HEALTH & SAFETY

During the installation of this stove and any related building works you must comply with any current Health & Safety at Work regulations. Always use protective gloves and use the tool when adjusting the air controls. When using fire cement always follow the manufacturer's instructions.

BUILDING CONTROL AND HETAS

In the United Kingdom most installations of solid fuel and wood burning appliances and systems are subject to the requirements of Building Regulations. These regulations must be observed and such installations need to be notified to the relevant Local Authority Building Control department by law.

Hetas (*www.hetas.co.uk*) is the official body recognised by the Government to approve solid fuel domestic heating appliances and the registration of competent installers.

HETAS registered installers in England and Wales can self-certificate their work thus avoiding the need for costly and time consuming Building Notice applications to the local Building Control department. They will provide you with a certificate of compliance upon completion of the installation and send a copy to Hetas for onward notification to your local authority. The certificate of compliance is an important record demonstrating that the work was carried out legally and in accordance with the relevant Building Regulations and by a trained and competent installer of a registered business.

Should you ever come to sell your property, the information about work carried out under Building Regulations is required and used by solicitors on their enquiry forms. Failure to demonstrate compliant work could adversely affect the sale of your property.

More information on the Building Regulations process can be found on the Communities and Local Government website *www.labc.uk.com*

INSTALLATION REGULATIONS

You must ensure that your boiler stove is installed by a recognised competent person who is appropriately qualified in the installation of boiler stoves and that the installation complies with all local, national and European building regulations.

In the UK we strongly recommend using a Hetas registered installer (*www.hetas.co.uk*) and in Ireland a registered installer from INFO – the Irish Nationwide Fireplace Organisation (*www.fireplace.ie*).

For further information please consult:

England & Wales
Building Regulations Document J (revised October 2010) – Combustion Appliances and Fuel Storage Systems *www.planningportal.gov.uk*

Scotland
Building Standards (2001) Domestic
www.sbsa.gov.uk

Northern Ireland
The Building Regulations (Northern Ireland) 2000 / Amendment 2006 / Amendment No 2 2006
www.buildingcontrol-ni.com

Isle of Man
Building Regulations (2007) – Isle of Man
www.gov.im

Republic of Ireland
Approved Document J – Heat Producing Appliances
www.environ.ie

Other Information Points

For additional useful information and links to the government websites above, including informative downloads, visit *www.soliftec.com*.

The Solid Fuel Association website is also a very good source of practical information and downloads *www.solidfuel.co.uk*.

The British Flue and Chimney Manufacturers Association website, accessed through *www.feta.co.uk/bfcma*, produces an authoritative and informative download *Yellow Guide* to solid fuel flues and chimneys.

UK SMOKE CONTROL AREAS

The Clean Air Act 1993 and Smoke Control Areas

Under the Clean Air Act local authorities may declare the whole or part of the district of the Authority to be a Smoke Control Area. It is an offence to burn an 'unauthorised fuel' (ie non-smokeless fuel) in a Smoke Control Area. It is a legal requirement that fuels burnt or obtained for use in Smoke Control Areas have been 'authorised' and officially designated "Smokeless Fuels'. Wood log are not classified as a Smokeless Fuel and therefore should not be burned in the Alpha Inset stove if it is located in a building within a Smoke Control Area. In such a case you must only use an Approved Smokeless Fuel.

Further information on the requirements of the Clean Air Act can be found here:
www.smokecontrol.defra.gov.uk.

Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of Smoke Control Areas and you can contact them for details of Clean Air Act requirements.

Even if you don't live in a Smoke Control Area it is still the householder's legal responsibility not to cause nuisance smoke. Your inset stove therefore should, at all times, be operated in accordance with these instructions which have been written to help you minimise the amount of smoke produced from your stove.

See page 11 for recommended fuels for your Alpha Inset Boiler stove.

BUILDINGS INSURANCE

It is a requirement by some building insurance companies to inform them of the installation of a new fixed heating appliance and a relevant certificate of compliance produced.

PACKING LIST

As soon as you receive your new stove please check that you have a full set of components as set out in the list below. In the unlikely event of a shortage, please report this immediately to the dealer you bought the stove from. Never attempt to operate the stove with missing or damaged components.

Product Information

A This Instruction Booklet and Warranty Card
B Stove Serial Number

Stove Components

C Handle Cover and Handle Cover Securing Bolt
D Flue Spigot and 2 Securing Bolts
E Flue Spigot
F Ash Lip
G Screw and Anchor for base fixing
H Fire Grate and integral Log Bar (in place)
J Baffle Plate (Located inside roof of fire chamber)

Equipment

K Ash Pan
L Operating Tool

Tool Bag

M Safety Mitten
G Spare Glass Retaining Clips
G Spare Glass Retaining Clip Screws
G Allen key (for door hinges)
M Spare Door Rope Seal

ASSEMBLING THE STOVE

Your new inset boiler stove is extremely heavy. Always handle with care and make sure that you have additional strong help when you move it.

The door and door handle, should never be used to grip the stove as they could be damaged from supporting the stove's weight. Items, such as the fire grate and baffle plate can all be easily removed to help reduce the weight. Under no circumstances should the door be removed as this will invalidate your Alpha Warranty.

Always lift the stove to finally position it. Alternatively it may be possible to place the stove on heavy duty plastic sheeting or thick floor covering to slide the stove into position, being careful not to damage any finished floor or decorative hearth surfaces with trapped grit or building debris.

• **Unpack** Remove the stove from its recyclable packaging. You must retain this until the stove is installed and is fully operational. Unfasten retaining wires and remove any components, including those inside the ash pan, from inside the stove.

• **Inspect** Please inspect the stove to check that it has not been damaged in transit – never attempt to install a stove which has been damaged. If damage is suspected then report this immediately to your stove dealer.

• **Check List** Study the Packing List on page 8 and make sure that you have received all of the components listed before proceeding. Some components are contained within the ash pan or will already be fitted to the stove.

• **Baffle Plate** Check the position of the baffle plate (sometimes known as the throat plate) inside the 'roof' of the stove to ensure that it has not moved during transit. This is a heavy metal plate which directs flames and helps retain heat inside the stove to warm the water.

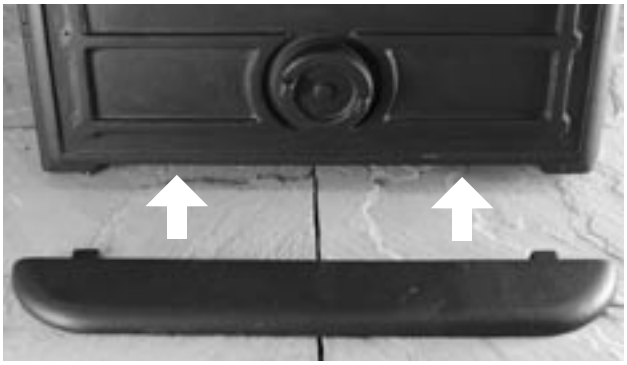
It is best to fully familiarise yourself with the baffle plate's correct location by practising removing it and re-fitting it prior to the stove's installation as you will need to regularly check the top of this plate and the access to the flue way to avoid potential soot build up and blockages. Once you know how to do this it is a very easy operation. See page 10

• **Flue spigot plate** To maximise efficiency and safety the AL357i-B Inset Boiler stove has been designed to work best in conjunction with a 150mm (6") flexible flue liner connected to the purpose-designed spigot housed on top of the stove. To avoid soot build-up on the stove bodywork, which could potentially ignite and cause a chimney fire, we therefore strongly recommend that a liner is always used. If you are proposing to burn mineral fuels then 904L grade liner is recommended as this will provide greater resistance to the combined corrosive affects of moisture and the acid content of certain mineral fuels.

Should it not be possible to fit a liner then in the interests of safety another means of being able to clean the flue system and top of the stove, for example a soot box, should be created in the chimney. The householder should ensure that the chimney is regularly swept (at least twice a year when burning wood) and at the same time if possible, the stove removed so that the top can be thoroughly cleared of any soot and debris build-up. See page 18 for instructions on safely sealing the fireplace back plate.

• **System ports** Each of the four water ports on your inset boiler has been fitted with a bolt seal. To avoid the internal threads being contaminated with grit and other debris please ensure that these are only removed when the system pipework is ready to be connected.

• **Ash Lip** The ash lip is simply fitted to the installed stove by positioning it at the front and pushing it underneath to make a snug fit. It can then be easily removed for cleaning the hearth.



• **Handle Assembly** Thread the split washer along the handle bolt. Feed the bolt and washer through the handle grip. Use a Phillips crosshead screwdriver to attach the assembled grip to the door handle clamp mechanism on the door, being careful not to over-tighten. Remember not to lift or position the stove using the door or handle.

Your inset boiler stove is now ready for installation.

REMOVING THE BAFFLE PLATE

Regular checking of the baffle plate will ensure that the stove's flueway stays clear of soot as well as ensure its continued safe and efficient operation. If you have never owned a stove before it is important to understand how critical this aspect of operating a stove is. As stated previously it is best to familiarise yourself with this procedure before the stove is installed.

With the Alpha Inset Boiler there are no baffle fixing brackets, bolts or fire bricks to remove.

Firstly, Protect any decorative finishes such as porous stonework, tile grout or carpets as there will inevitably be some sooty debris removed with the baffle. When the stove and boiler are cold, simply put your hand inside the 'roof' of the fire chamber and push upwards. This will release the plate which should then be pulled forward slightly and dropped down on one side to clear the fixed retainers ready for inspection and cleaning.

To replace the baffle, simply reverse the operation – ensuring that it sits securely along the retaining ledge at the back of the fire chamber and that there are no air gaps between the retainer sand the baffle.

Remember, only attempt to remove the baffle when you are sure that the inside of the stove is cold.

RECOMMENDED FUELS

Please note If you live in a UK Smoke Control Area you must only burn approved smokeless fuels. The following fuels are approved by Alpha for use in the AL357i-B Inset Boiler stove:

• **Wood Logs** *Only ever use dried, fully seasoned chopped wood logs with a moisture content of less than 20%.*

Wood which is well seasoned makes a distinctive 'clack' rather than a dull 'thud' when knocked together. It will also feel much lighter than an unseasoned log. Other indicators include bark peeling away and cracking and splitting around the outside.

Ideally wood should be seasoned outdoors for between 18 to 24 months – the harder the wood then the longer the seasoning. It should be stacked off the ground with plenty of space between the logs to allow air movement and with the top covered to keep rain and snow out. Seasoned wood will give you approximately 50% more heat output than the equivalent unseasoned log.

Most types of hardwood, for instance Ash (generally regarded as the best), Birch, Beech, Oak and Elm can be used. However, avoid woods with a high resin content. As a rule of thumb, the heavier the wood, then the greater the heat output and the longer burn time – the time between refills. All of this is providing it is fully seasoned wood.

Never use wet or unseasoned (green) wood as this will cause nuisance smoke and a very disappointing fire.

Its use could quickly result in the build up of soot and creosote – a matter of weeks sometimes, which because of the higher temperatures of stove flue gases, could easily cause a flue or chimney fire. In addition, burning wet wood creates other environmental problems, a less efficient fuel economy and can eventually clog your flue system and cowl. It will also reduce the effectiveness of the stove's Airwash system thus causing staining and blackening of the glass.

Wet or unseasoned would produces the following poor performance:

- Hard to light fires
- Fires that are difficult to keep going or to keep burning well
- Smoky fires with fewer flames which are also of a dull orange colour
- Increased dense grey / blue smoke from the chimney
- Shorter burn times
- Low heat output
- Dirty glass and firebricks
- Excessive and rapid creosote build-up in the flue system and chimney
- Unpleasant smoky smells both inside and sometimes outside the house

In the event of a problem with your stove – always check your choice of fuel first!

Manufactured or finished wood products, such as plywood and chipboard, must also be strictly avoided because of the high chemical adhesive content used in their production which will also leave harmful, potentially corrosive, residue inside the stove and flue system.

For more information about wood fuel visit the DEFRA funded National Energy Foundation website *Logpile* at *www.nef.org.uk/logpile.*

• **Peat or 'Turf'** Peat is an excellent cost-effective fuel alternative and provides a similar calorific heat output to wood. It's also clean and easy to handle with low atmospheric emissions. However, you must ensure that the peat is kept thoroughly dry as it absorbs and retains unwanted moisture very easily.

Peat has traditionally been used as a heating fuel in both Scotland and Ireland and you can find out more by visiting these suppliers' useful websites – www.peatheat.co.uk (Scotland) and www.bnm.ie/fuels (Ireland).

Should you prefer to burn peat then we would strongly recommend using 904L grade flexible liner to line your chimney.

• **Multi Fuels (Other than Wood or Peat)** If you cannot burn wood then we recommend burning a smokeless alternative, such as smokeless nuggets, as this is better for the stove and flue system as well as the environment. Your stove is also approved to burn coal – however, we do not recommend prolonged use of bituminous house coal because of the excessive soot it produces. There are many different brands of high quality smokeless coal nuggets available in the UK and Ireland. The most popular include Phurnacite, Taybrite, Ancit and Homefire.

Your local fuel merchant will be able to advise you on the best types of coals suitable for multi fuel stoves, as well as natural mineral fuel alternatives such as anthracites which burn cleanly. The following fuel merchant's website also has good descriptions of the comparative benefits that the brands listed above have to offer – *www.coalproducts.co.uk*.

You can also find out more by visiting the Hetas website *www.hetas.co.uk*.

PROHIBITED FUELS

Never use your stove like an incinerator. Burning prohibited 'fuels' in a Smoke Control Area is illegal.

Burning the following materials could also damage your stove and flue system, rendering the product warranties on the stove and flue system components void.

• **Petroleum Coke** Never burn petroleum coke as this burns at a very high temperature and its continued use will almost certainly cause irreparable damage to components such as the grate, baffle plate and fire bars.

• **Bituminous House Coal** is not recommended because it produces excessive soot deposits, which is not good for the environment, and thus considerably increases the need for frequent cleaning of the stove and flue system.

• **Household Rubbish** Printed matter (excluding very small amounts of newspaper for starting the fire), plastic, rubber, lacquered or impregnated wood, plywood, chipboard and household rubbish, such as milk cartons, should also be avoided. During combustion some of these materials may develop substances which could be hazardous to your health and be harmful to the environment.

• **Flammable Liquids** Never use methylated spirits, petrol or other highly inflammable liquids for lighting the fire as these could cause an explosion in the confined spaces of the fire chamber.

UNDERSTANDING HOW DIFFERENT FUELS BURN

Wood and solid or mineral fuels (multi fuels) burn in different ways and you will need to understand these differences if you are a newcomer to wood burners and multi fuel stoves.

Putting it simply, mineral fuels, such as coal or smokeless nuggets, need a flow of combustion air through the bottom grate which is known as Primary Air, whereas wood fuel works much better when its combustion air is taken from above the grate. This source of air is known as Secondary Air. Wood always burns best on a bed of its own embers and the ashes shouldn't need to be riddled. Again mineral fuels differ because they need combustion air from below the grate therefore needs to be riddled to keep the air passage clear.

See the section below to help you understand how to control the different types of combustion air that wood and mineral fuels need.

Your new stove can burn very well, or very poorly, depending on how you light the fire, how you refuel the fire, and, of course, the type and quality of the fuel that you are burning. A log moisture meter is a cost-effective investment if you want to maximise the efficiency of your stove and wood fuel.

Wear protective gloves when loading a burning stove and place the fuel precisely where you want it in the fire chamber by using heat-resistant tongs. Always open the stove door gently to avoid unnecessary air turbulence which could cause fly ash or small lighted embers to be drawn from the fire chamber and beyond the protective hearth.

The stove is *not* designed to be operated with the door left open continuously – this will reduce its operating efficiency and it will consume more fuel very quickly and produce less heat.

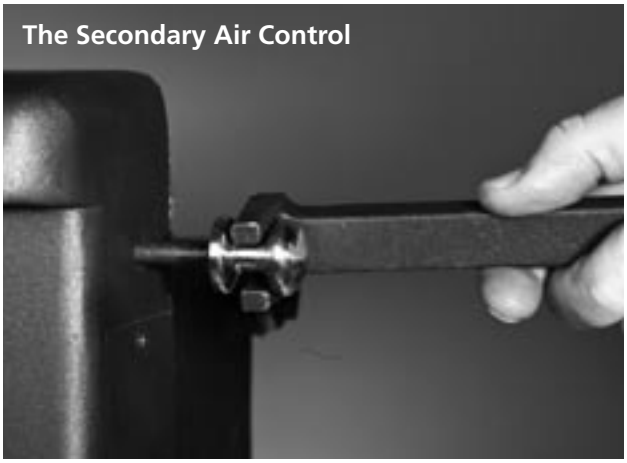
CONTROLLING THE COMBUSTION AIR

Your Alpha Inset Boiler stove has three simple to use air controls:

1 Primary Air Control This is the large control knob in the centre at the base of the stove front. Primary Air is required when burning mineral fuels (and to quickly aid the supply of air during the initial combustion of wood). Using the tool provided, turn it anti-clockwise to open and add air.

The Primary Air Control

2 Secondary Air Control This is the silver control knob on the right hand side of the stove – pull it out to open the air supply. Secondary Air is needed when burning wood and is not usually needed when burning mineral fuels (unless it is to maximise the air supply to aid the initial combustion).


The Secondary Air Control

3 Thermostat Control Zero is closed and 8 fully open. This adjusts the temperature of the water leaving the boiler from low when closed off (approx 50C°) to high (approx 90C°) by controlling part of the combustion air supply to the fire chamber.

The effectiveness of adjustment will involve the interaction of the Primary and Secondary Air supply

and other factors such as the fuel type, the system set-up and the pump flow speed. Finding the right setting(s) will be a matter of trial and error as well as personal preference. For example the Thermostat Control, can sometimes be used for simultaneous control of both the water temperature and the burn rate of a mineral fuel load by shutting of both the Secondary Air and the Primary Air.

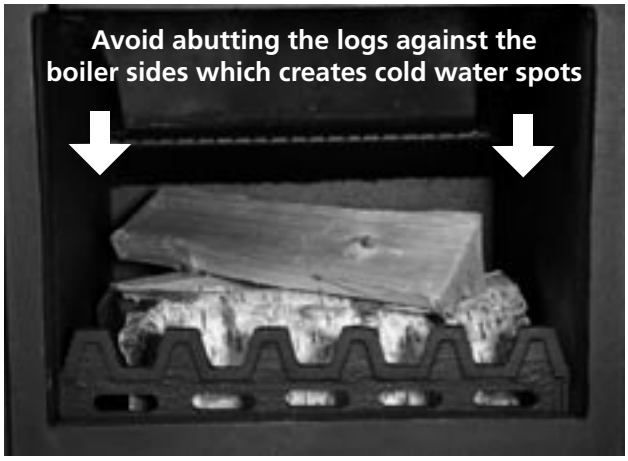
It is worth noting that this control does not 'turn off' the hot water production completely and that your system design must therefore include a means to dissipate any surplus heat. See page 20

BURNING WOOD LOGS

Important: Try not to exceed the recommended log length. This size allows approximately 25mm (1") of space at either end of the log to prevent cold water spots.

Remember, these instructions are an initial guideline to help you get started. As you begin to gain experience of your stove and choice of fuel(s), as well as your flue system, you will be able to adjust these procedures and control settings to your personal preference.

As previously stated wood burns best on a bed of its own embers which also forms a barrier to reflect heat and protect the fire grate from being damaged. You can therefore leave a bed of ash in place to create a layer of approximately 25mm (1"), only occasionally removing the surplus ash from the grate. Ash should still be regularly removed from the ash pan – never let the ash pan get over-filled. Once you have lived with your stove for a while you'll soon get to know how often you should do this.



Ensure that there is a gap of approximately 25mm (1") between both ends of the logs and the boiler sides. Log ends placed against the boiler sides restrict combustion and can create unwanted cold spots in both the log and the water. As the end grain of the wood produces more of the remaining moisture and gases, whenever possible point the log ends away from the glass to help keep the glass clean.

Fuel Load Ideally the logs should be approximately 275mm (11") long. A typical fuel load should weigh 2.5 kg (5lb 8oz) with a maximum load of 3.6kg (8lb).

To get the best out of your stove, ideally you will need three different thicknesses of wood log as you build the fire through each lighting phase:

1 Kindling This is generally finely chopped wood, approximately 5 to 10mm thick (1/4" to 1/2") from your supply of logs. Alternatively use dried twigs or small branches which have also been fully seasoned

2 Lighting Logs These are slightly bigger diameter logs, approximately 25 to 50mm (1" to 2")

3 Refuelling Logs These should be approximately 75 to 100mm thick (3" to 4"). Bigger logs should be split down to this size

LIGHTING A WOOD FIRE

The main difference between smoke and flame is temperature, so when lighting a fire you need to get the temperature in the fire chamber as high as possible as quickly as possible. This is also critical in creating a good 'draw' within the flue system, especially when it is particularly cold outside.

When flue gas temperatures are below 120°C, creosote tars form within the gases and the fire will be smoky and burn with a dull orange flame. Burning the stove like this for a sustained period will create unnecessary smoke and not be good for the chimney or flue system.

1 The Lighting Phase

For best results:
Primary Air (bottom control) – fully open
Secondary Air (top control) – fully open
Thermostat Control – fully open (8)
Door – slightly ajar (optional)

Avoid trying to light the fire with excessive amounts of paper as this has a very high ash content which can 'smother' the ash bed. If you have good dry kindling or sticks then paper should not be needed at all.

The size of the logs used at each stage is also important. If the kindling wood is too large this will not light well and will be slow to get started. Two handfuls of smaller pieces of kindling (equivalent to the weight of typical log) layered in a criss-cross or 'wig-wam' and a small firelighter will get the fire well established and up to operating temperature quickly.

If you feel you have a weak chimney draught, then keeping the stove door slightly ajar for the first 10 – 15 minutes will assist, after which it should be closed. This will also help prevent the build-up of condensation on the door glass until the glass warms up, especially if you have not used the stove for a few days. During the lighting phase the Primary and Secondary Air settings, as well as the Thermostat Control, on the stove should be fully open.

2 The First Refuel Phase

For best results: After 10 minutes...
Primary Air (bottom control) – close completely
Secondary Air (top control) – fully open
Thermostat Control – fully open (8)
Door – closed

Once the embers are starting to glow and the flames start to calm down, the first refuelling can take place. For this stage use slightly larger pieces of wood than the lighting wood – but smaller than the main refuelling wood in the next phase. The reason for this is that the embers from the kindling wood are small and will not hold a high temperature for too long.

If unnecessarily large pieces of wood are placed on the embers at this stage and do not ignite well there is a risk that the firebox will quickly cool down and the wood start to smoke. When the first refuelling wood is burning well (say, after about 10 minutes from the start) the Primary Air can be completely shut off.

3 The Main Firing Phase

For best results: After 17 or 18 minutes...
Secondary Air (top control) – remains open
Primary Air (bottom control) – remains closed
Thermostat Control – remains fully open (8)
Door – remains closed
Once the embers of the first refuel phase are glowing then these can be evenly spread with a poker or companion tool and the main larger refuelling wood can be quickly set.

Wood burns best if the flames have other wood to 'play off'. For example a single dense piece of wood or log will not burn as well as 2 or 3 smaller logs of equivalent mass. The more contact the wood has with each other piece, the hotter the embers will be. 3 or 4 logs tightly packed to each other will burn longer but at a lower temperature than loosely criss-crossed logs.

Approximately 1.5kg to 2.5kg of wood logs can be added at this stage. Be careful not to add too many logs as they may 'smother' the fire or cause the stove to over-fire.

Try to avoid setting the ends of the logs pointing towards the glass as this is where some of the gases and moisture from the logs escapes and this can cause staining which the Airwash may find difficult to remove.

Only reduce the Secondary Air control when the wood has 'carbonised' and the fire is burning at a high temperature. This is when the ash on the burning wood looks light grey and virtually covers all of the wood. You will be able to tell when the stove is at this stage by studying the colour of the burning surfaces – the 'lighter' they are the better the wood is burning. If the log surface is predominately black and / or the flames are a dull orange then there is still some time to go before the fire is operating at full temperature.

Avoid leaving the stove unattended after refuelling until the flames are well established on the new logs. Always load onto a bed of hot embers.

Once the fire is established the flame pattern can then be adjusted to your requirements with the top Secondary Air (Airwash) control.

Getting the balance right between a gently burning stove and one that is burning too slowly, creating smoke and causing the Airwash to fail and consequently the glass to stain, is very much a matter of trial and error. If you are burning well-seasoned wood then a quick 'blast' of the stove operating at 'full throttle', with Secondary and Primary Air fully open, should quickly burn off any deposits left from any slower burning phase.

If you are lighting the stove to firstly provide hot water and heat into your central heating, rather than heat into the room, you should not need to adjust the Secondary Air or Thermostat Control until you are satisfied that both of these have been achieved. This could take as long as two hours and will probably require at least one full refuel.

4 Refuelling

For best results: Just before you refuel...
Primary Air (bottom control) – fully open
Secondary Air (top control) – fully open
Thermostat Control – fully open (8)

After loading and when new fuel is burning well...
Primary Air – close completely
Secondary Air– adjust to suit
Thermostat Control – adjust to suit (0 – 8)

Regular, smaller loads are better because they keep the fire chamber at a higher temperature, without over-firing it. The higher operating temperature helps prevent nuisance smoke and sooty deposits.

Never overfill the fire chamber and also avoid over-sized pieces of wood which will 'slow' the fire down at the start but then could lead to over-firing.

Before refuelling open the Primary and Secondary Air supply, as well as the Thermostat Control, so that there is a good strong fire and the embers are glowing red to help the new fuel to start burning quickly. This will also ensure that there is no build-up of harmful gas which could be released into the room when the fire chamber door is opened.

Rake the embers and spread them out to make an even bed. You may need to add some kindling to re-establish the fire. Add the new wood as before ensuring that the logs are not tightly packed.

Newly refuelled wood always requires some additional air so make sure the Secondary Air and the Thermostat Control are back in the fully open position after refuelling. Do not adjust the Secondary Air or Thermostat Control until the fire is burning well and you can see bright yellow vigorous flames.

Once the fire is established, usually after about five minutes, close the Primary Air and adjust the flame pattern again to your requirements with the Secondary Air and Thermostat Controls.

If the new wood fuel is slow to catch alight, even with the Primary, Secondary and Thermostat Air fully open then try opening the stove door slightly to provide additional combustion air and until strong vibrant flames are established. This should only take a matter of a minute or so and on no account should the stove be left unattended while this is happening as the stove could very easily over-fire.

5 Controlling the boiler temperature

This will be very much a matter of trial and error using the guidelines above. When the stove has been running at operating temperature for a number of hours the Thermostat Control, can be used for simultaneous control of both the water temperature and the burn rate of wood fuel load (and therefore the heat into the room). To do this, ensure the Primary Air is fully closed, adjust the Secondary Air so that some combustion air is still provided to ensure the Airwash will continue to work. Then simply control the flame pattern and burn rate with the Thermostat Control. if the glass begins to soot up provide more Secondary Air.

Some simple wood burning tips

1 Boiler stoves operate at a much lower temperature than non-boiler stoves and consequently the potential to create soot or creosote build-up in the flue system is also much greater, especially when operating the stove in 'slumber' mode during overnight burning. We therefore recommend burning your Alpha Inset Boiler on high output for at least 30 minutes each day to help burn off any potential soot or creosote build-up – but be careful not to over-fire the stove.

2 Small regular loads when refuelling will produce a more efficient and cleaner burning performance.

3 Avoid burning large amounts of wood with the Secondary Air supply turned down as this will reduce the effectiveness of the Airwash system, as well as produce excessive smoke and create potential creosote build-up.

4 Never overload the stove – it will be smoky and inefficient as well as very slow to establish a good burn and could eventually possibly over-fire when it does get established.

5 Bright vibrant flames and a clean fire chamber indicates that your stove is operating well.

BURNING MINERAL FUELS

These instructions are an initial guideline to help you get started. As you begin to gain experience of your stove and choice of fuel(s), as well as your flue system, you will be able to adjust these procedures and control settings to your personal preference.

Mineral fuels require much more combustion air from below the fuel load than wood. This means that Primary Air is generally needed throughout the initial burning phases. The Primary Air control should always be in the fully open position at the start of the lighting phase (you may also need to leave the stove door open slightly). Burning mineral fuels also requires the grate to be riddled more often to allow the free flow of combustion air from the Primary Air source – therefore, always ensure that the firegrate is clear.

The maximum recommended mineral fuel load for this stove is 3.7kg (8lb 2oz).

1 The Lighting Phase

For best results:
Primary Air (bottom control) – fully open
Secondary Air (top control) – fully open
Thermostat Control – fully open (8)
Door – slightly ajar (optional)

Light your fire in the traditional way with a small wood kindling fire and small amounts of your choice of mineral fuel placed lightly on top making sure to leave plenty of air space. On very cold days increase the amount of kindling used to ensure a good up-draught in your flue system is quickly established.

2 The First Refuel Phase

For best results: After 10 -15 minutes...
Primary Air (bottom control) – fully open
Secondary Air (top control) – adjust to suit
Thermostat Control – fully open (8)
Door – closed

Once the mineral fuel is burning well then add some

additional fuel (but not too much so that it 'kills' the mineral fuel that's already alight), until there is a good bed of burning fuel. Avoid stacking too much fuel against the back and sides of the boiler as this could potentially overheat the stove's components and cause permanent damage. Ideally, when fully burning the fuel load should look like a shallow dome.

When burning good quality mineral fuels Secondary Air (Airwash) should not be needed to keep the glass clean, therefore the Secondary Air can be reduced or shut off completely. The Primary Air control should then be used to adjust the flame pattern in the early stages. You may find that a combination of subtle adjustments to both air controls may best suit your individual requirements. Leave the Thermostat Control fully open until the heating and hot water system is at the desired temperature – this is usually after a couple of hours and depends on the system requirements.

3 Refuelling

For best results: Just before you refuel...
Primary Air (bottom control) – fully open
Secondary Air (top control) – fully open
Thermostat Control – fully open (8)

After loading and when new fuel is burning well...
Primary Air – adjusted to suit
Secondary Air– fully close or adjust to suit
Thermostat Control – adjust to suit (0 – 8)

When refuelling it is better to use smaller fuel loads more often which will provide you with a cleaner, more efficient burn.

Immediately after refuelling, open the Primary Air to maximise the combustion air delivered to the remaining fuel so that when the new fuel is added it can get quickly established without 'damping' the fire.

Spread the embers with a poker just before adding the new fuel. Re-adjust the air settings once all the fuel is burning normally.

Empty the ash pan regularly – at least once a day and do not let the ash build up under the grate as this will create a strong hot spot which could eventually warp or burn-out your grate. It will also eventually limit the flow of Primary combustion air and could affect the stove's performance.

4 Controlling the boiler temperature

As previously stated this will be very much a matter of trial and error using the guidelines above. When the stove has been running at operating temperature for a number of hours the Thermostat Control, can be used for simultaneous control of both the water temperature and the burn rate of the mineral fuel load (and therefore the heat into the room). To do this, ensure the Primary and Secondary Air is fully closed. Then simply control the flame pattern and burn rate with the Thermostat Control. However, you may still need to undertake some subtle adjustments to both the Primary and Secondary Air supply to achieve the correct balance of combustion air for your stove and flue system draught.

OVERNIGHT BURNING

The Alpha Inset Boiler stove is designed to allow overnight burning. To do this put a good fuel load into the stove and allow it to burn for about 15 – 20 minutes in the normal way. If burning wood, then limit the Secondary Air supply and ensure the Primary Air supply is closed. Adjust both the Thermostat Control and Secondary Air to achieve a slower burn rate. If the glass begins to soot up then add some more Secondary Air (Airwash).

Do not 'starve' the fuel of combustion air as this could create a very inefficient smoky burn and cause heavy soot and creosote build-ups in the flueway and fuel system. The best setting to achieve the best burn and cleanest glass will be a matter of experimentation.

For mineral fuels close the Secondary Air supply and adjust the Primary and Thermostat Air supply to achieve a slower burn rate.

When you return to your stove, check the ash pan does not need emptying, then fully open all three air supply controls. If the firebed shows that it still has sufficient burning embers then simply add a small fuel load as if lighting the fire from the start (see above) and add more fuel until you have a good fire.

If you have been burning mineral fuels you will probably need to riddle the firegrate to re-establish the Primary Air flow. Do not add a full fuel load until the firebed is hot and any initial small fuel load has been allowed to fully ignite. A large 'cold' fuel load could easily starve the embers of combustion air and put out the fire.

Always operate fully burning for approximately 30 minutes to burn off any overnight soot deposits before you revert to your preferred operating levels.

During overnight burning the stove glass may blacken but if dry wood fuel has been used and a hot fire is re-established then these deposits should quickly burn off. However, if there are no burning embers and you need to start the fire again, simply wipe any deposits from the glass using kitchen roll or newspaper. Do not use a damp cloth or proprietary cleaning fluids unless you are sure that the stove glass at least is at room temperature.

REMOVING ASH

Remember, you do not need to riddle wood ash during firing, but possibly only at the start when some Primary Air is needed to aid the initial combustion.

Riddling allows mineral fuel ash to fall into the collection pan below the fire bed to help maintain a flow of Primary combustion air to the fuel. The ash pan should never be allowed to over-fill as this will limit the Primary Air flow and could cause excessive heat build-up which could eventually warp or burn out the grate.

Locate the operating tool in the slot at the front of the ash pan to make a handle and lift the pan from the stove. For safety reasons ash should be removed when the stove is cold. If this is not always possible then extra care should be taken and decorative and combustible surfaces, such as laminate floors or carpets, should be protected against potential accidental spillage. Even if the ash appears to be cold protective gloves should be worn and the refuse ash placed in a non-combustible container. The ash could still be hot with the possibility of hidden live embers

As you remove the ash from your home ensure that it is covered to protect it from any draught or wind which could blow the ash out of your container.

Wood ash can be composted or used in the garden.

The forked end of the tool is inserted underneath the ash pan grip as shown above to create the ash pan handle.

INSTALLATION CHECK-LIST

This information is intended to outline the general principles of installing your inset stove. However, as each installation will vary and must comply with local, national and European building regulations, which could be different from country to country, it is unfortunately not possible, nor is it intended, for these guidelines to be comprehensive.

Legal Requirements

Please note that, not only is it a legal requirement to ensure that your stove installation complies with all applicable building regulations, it is also a requirement of your Warranty that the stove is installed by a competent person such as a Hetas or INFO registered installer who will be fully aware of any building and safety regulations which apply to stove installations in your location.

Inset Stove Location Checklist

• The existing constructional hearth (the main part of the hearth) is suitably constructed and is of a thickness that conforms to all applicable building regulations.

• The back hearth (the part of the hearth that the inset stove sits upon and which is usually within the fireplace recess or opening) is also suitably constructed and conforms to all applicable building regulations.

• The superimposed hearth (the thinner, usually decorative surface, which sits on the constructional part of the hearth) is suitably constructed and conforms to all applicable building regulations.

• The fireplace recess or opening is suitably constructed and conforms to all applicable building regulations and can accommodate the stove along with the safe minimum operating distances required.

• Any adjacent walls, next to which the stove is installed, are of a suitable thickness and are of non-combustible material and conform to all applicable building regulations.

• The air supply is sufficient for full combustion of the stove's fuel and the health and safety of the room's occupants. Any extractor fans inside the room should be removed or permanently disabled. Note that in the UK stoves above 5kW output require a permanently open dedicated air supply within the room which must conform to applicable building regulations. The AL357i-B Alpha Inset Boiler stove has been officially rated at a maximum output of 12.6kW and therefore the installation must incorporate an appropriately sized air vent.

• The chimney is of sufficient height, is suitably constructed and is in good condition and conforms to all applicable building regulations regarding stove installation. The minimum flue height required for the Alpha Inset is 4.5 metres (15') from the hearth to the top of the chimney terminal.

• The chimney has been swept and tested prior to installation.

• The proximity of all combustible materials to the intended stove installation conforms to the minimum requirements outlined within this handbook as well as local, national and European building regulations, whichever is the greater. A combustible material is anything which can burn once it gets hot enough and includes skirting boards, wooden fire surrounds, wooden mantles, wallpaper, fabrics and floor coverings. Remember these materials could be concealed behind other materials which on the surface may appear to be non-combustible, for example, stud partitioned walls. It also worth noting that heat-resistant materials will eventually combust should they inadvertently reach the required higher combustion temperatures.

Important Minimum Distances For This Stove

The minimum distances to combustible materials for the AL357i-B Alpha Inset are as follows:

Top (eg mantel shelf)	200 mm
Sides (eg fire surround)	100 mm

APPLIANCE INSTALLATION: GENERAL GUIDELINES

Please refer specifically to current building regulations which apply to your country or region. Adopt whichever provides the highest / safest margin.

Asbestos

This stove does not contain Asbestos. However, check that there is no possibility of disturbing any asbestos-based materials during its installation. You may intend removing an older appliance prior to installing your new stove, and you should be aware that the old appliance or installation could incorporate heat protective asbestos sheet or other asbestos-based materials – if in doubt seek guidance at *www.hse.gov.uk/asbestos* – do not underestimate the potential health hazards of handling Asbestos.

The Hearth

The hearth should be made of solid non-combustible material, set on a firm and level base and should be at least 125mm (5") thick. This can include the thickness of any non-combustible floor under the hearth or non-combustible decorative surface. It must be capable of supporting the weight of the stove (when loaded) and boiler (with water add 10kg) along with any attached flexible flue liner which may bear down on the stove. This hearth must conform to local building regulations which may vary from country to country.

In England and Wales there is a minimum requirement for the hearth to project 500mm (20") in front of any brick or stone recess and 150mm (6") at each side of the recess. The hearth should extend by a minimum of 225mm (9") from the front of the stove (which includes the edge of the ash lip). As a general rule it is best to extend the hearth to at least 75mm (3") beyond the furthest out-swing of the stove door if possible to avoid any potential live ash held on the inset door falling on to combustible flooring or floor coverings. If the top of the hearth and any combustible floor coverings are level with each other then a retaining fender should be fitted to warn occupants of the hearth area. Alternatively, a 28mm (1.1") change in level provided by a decorative non-combustible material such as stone, marble, granite, ceramic tiles etc could be used.

Please note that some materials, such as marble, may not be suitable when used in a single sheet. This may prove problematic if, for example, the inset stove is being installed within an existing fire surround which features a one-piece back panel which the inset stove is intended to sit inside. Non-combustible fire surrounds intended for use with solid fuel open fires and stoves feature smaller panels pieced together which allow space for expansion when hot. Your stove dealer or installer should be able to advise you about the suitability of an existing fire surround.

The 'Fireplace'

The stove must be sited within a brick or stone fireplace recess. It is unsafe to use this inset stove as a free-standing stove.

The fireplace side and rear walls should be at least 75mm thick and made of non-combustible brick or stone. Any gaps at the back and sides of the stove and the fireplace aperture should be filled with non-combustible insulation material such as rockwool or vermiculite. This will not only improve the efficiency of the stove but also help avoid the potential build-up of combustible soot along the sides – this is an especially important requirement if you are *not* using a flue liner.

Inset Stove Fireplace Opening

Your Alpha Inset stove has been designed to fit relatively easily within a 16" x 22" (400mm x 550mm) standard builders' fire opening.

• Redundant back boilers or 'Baxi' type ash pits and air intakes ideally should be removed, filled and levelled.

• Existing fireplaces and hearths must be made of non-combustible materials as well as be suitable for use with a solid fuel stove. For example the hearth and backplate ideally should be 'slabbed' with concrete and any decorative surface finishes, such as marble, should be 'tiled' to allow for heat expansion.

• Ensure that any existing fire surround or fireplace back plate you propose to re-use or leave in position is secure and that any air gaps between it and the back wall are sealed, particularly around the actual fireplace opening and the backplate interface. It is important for safety reasons that this seal is air tight.

• Where possible once the stove position has been settled upon any significant gaps along the side and back of the inset stove should be filled with a suitable inert material such as rockwool. A vermiculite and cement mix (6 parts vermiculite to 1 part cement) can be used for filling large spaces – but under no circumstances should it be packed against the stove sides or pipework thus limiting the potential for the stove to be accessed or easily removed at some later point.

Flue Draught

The Alpha Inset has been tested with a flue draught pressure of 12pa and therefore to ensure performance which is line with the test results on page 3 the ideal flue draught pressure should be approximately 12Pa.

The Chimney, Flue and Flexible Liners

Other flued appliances must not share or be connected to the same flue system or chimney as this stove.

Generally speaking, the chimney or flue terminal must be above the height of the apex of the building and any other obstructions, such as trees, which are within 3m (10') of the flue terminal. Failure to do this could affect the efficiency of the stove and may also cause unwelcome down-draughts which would mean potentially dangerous flue gases could be emitted into room.

If you are using an existing chimney and it has been checked for condition and suitability (see below), in the interests of safety you must ensure that it is swept before the stove is installed, even if it has never been used or you intend to use a flexible liner. To find a local registered sweep visit The National Association of Chimney Sweeps at *www.chimneyworks.co.uk* or the Guild of Master Chimney Sweeps at *www.guildofmasterchimneysweeps.co.uk*.

The recommended minimum height for the chimney / flue system from the top of the stove to the top of the chimney terminal is 4.5m (15'). If this is not possible then a 'spinner' type cowl, to compensate for any potential limited up-draught, should always be specified and specialist advice sought on the correct type.

Under no circumstances should the stove's 150mm (6") diameter flue be reduced in any part of the flue system as this could cause a build-up of dangerous carbon monoxide gas.

When your new inset boiler stove is installed with a flexible flue liner it should be possible to sweep the chimney through the stove by simply removing the baffle plate inside the 'roof' of the stove. However, if you do not use a liner the installer should, if possible, provide an alternative means, such as a soot door with adequate air-tight seal, in the chimney wall to be able to clean the whole of the chimney / flue system.

Since stoves create flue gases at a much greater temperature than those produced by an open fire or gas appliance it does not necessarily follow that your chimney will function adequately (or safely) when your new stove is installed. The best way to ensure that you have a fully functioning flue system is to fit an approved flexible multi fuel flue liner. If you intend to predominantly burn mineral fuels then 904L grade liner will provide greater resistance to any acidic condensates produced by burning certain mineral fuels.

Alpha strongly recommend fitting a chimney liner for the following reasons:

• A flue liner is a major 'quantifiable' component in a total and fully functioning flue system. As such it will provide a consistent flue draught from the stove through to the chimney terminal and when back-filled with vermiculite will deliver much needed insulation to keep flue gases as hot as possible (particularly important for boiler stoves) which will help minimise the amount of smoke produced. It will also improve the stove's operation with greater control over the fuel burn rate and improve environmental and fuel efficiency.

• Your existing chimney could leak smoke, fumes and potentially dangerous 'invisible' carbon monoxide into other parts of the building.

• Condensation or creosote 'tar', often associated with burning wood, could eventually seep through the walls, particularly if they are made of old or porous brick and / or are jointed with lime mortar, eventually causing unsightly stains on decorative coverings.

• Stoves work best with the correct draught. Pre-1965 chimneys which have been built for open fires have larger (and irregular shaped) voids than those best suited for a modern stove and thus could reduce the effectiveness of the flue draught by making the flue too cold and difficult to warm. This is a particular problem if the chimney breast is on an outside wall and / or is subject to a strong prevailing wind.

• The interior surfaces of older flues could be eroded and also have rough surfaces which could cause resistance to the smooth flow of gases and consequently result in poor up-draught.

• Unfortunately many houses built since 1965 with clay or concrete chimney liners suffer from these being poorly installed, either through being fitted the wrong way up or not receiving an appropriate application of mortar to make a complete seal on each joint. Even though not particularly old, this could still potentially cause leaking smoke and fumes or condensation stains

Your approved installer will be able to advise you on the suitability of your chimney after undertaking a thorough inspection and smoke test. Any solid fuel flexible liner which is specified should be double skinned stainless steel, either 904L or 316Ti grade and be CE marked and / or Hetas Approved.

The British Flue and Chimney Manufacturers Association website, accessed through *www.feta.co.uk/bfcma*, produces an authoritative and informative download *Yellow Guide* to solid fuel flues and chimneys.

The Chimney Terminal

The existing chimney pot or terminal must be suitable for stove installation and should not restrict the smoke and fumes from the stove. It must provide at least the same outlet area as the flue pipe. It may be that your existing chimney terminal has been replaced with a ventilating terminal if the fireplace has been closed off at some point and this will need replacing.

Your installer will be able to advise you on the correct specification of any new cowl or terminal. Cowls have the additional advantage of limiting rain entering the flue system which could cause the inside of the stove to rust when it is not being used, particularly during the long periods outside the heating season.

Important: If you are not using a chimney liner you must provide a means of inspecting the flue system and the top of the stove.

SYSTEM INSTALLATION: GENERAL GUIDELINES

Central heating systems

A pumped central heating circuit combined with a gravity hot water circuit is generally the accepted specification for multi fuel boiler systems which are not linked to another system. However, achieving the correct balance between the pumped and gravity flows in such a system is critical to the efficient performance of the boiler stove and should be left to an experienced Hetas wet installer or appropriate specialist registered on a Competent Persons scheme. Increasingly new systems are specified as 'fully pumped' to provide improved operational control and this is a feature that we would recommend for your system.

Dual fuel linked systems

You may have purchased your new Alpha Inset Boiler stove with the intention of adding it to an existing heating system powered by a different fuel type. This is likely to be to a non-pressurised oil or gas system, but could also be solar powered, probably in a new pressurised system.

Linking two such systems requires specialist knowledge to ensure a fully functioning system which is efficient, safe and legal. Such systems require the installer to possess a knowledge and understanding which will be beyond the provisions and intentions of these general installation and operating guidelines. The United Kingdom's Solid Fuel Association through their website *www.solidfuel.co.uk*, provides informative downloads on various link-up system solutions.

The most common problem with link up systems is a failure to understand the existing system which may have faults which are then exacerbated by the new link. Our advice when linking this boiler stove to any system is therefore to consult the appropriate installation expert who will develop an understanding of your requirements and provide you with a thorough survey of any existing system.

There are various Government competent persons schemes listing installers trained in designing and installing linked systems:

- Hetas *www.hetas.co.uk*
- Association of Plumbing & Heating Contractors (Certification) *www.aphc.co.uk*
- Building Engineering Services Accreditation www.besca.org.uk
- NICEIC www.niceic.org.uk

BASIC SYSTEM ESSENTIALS

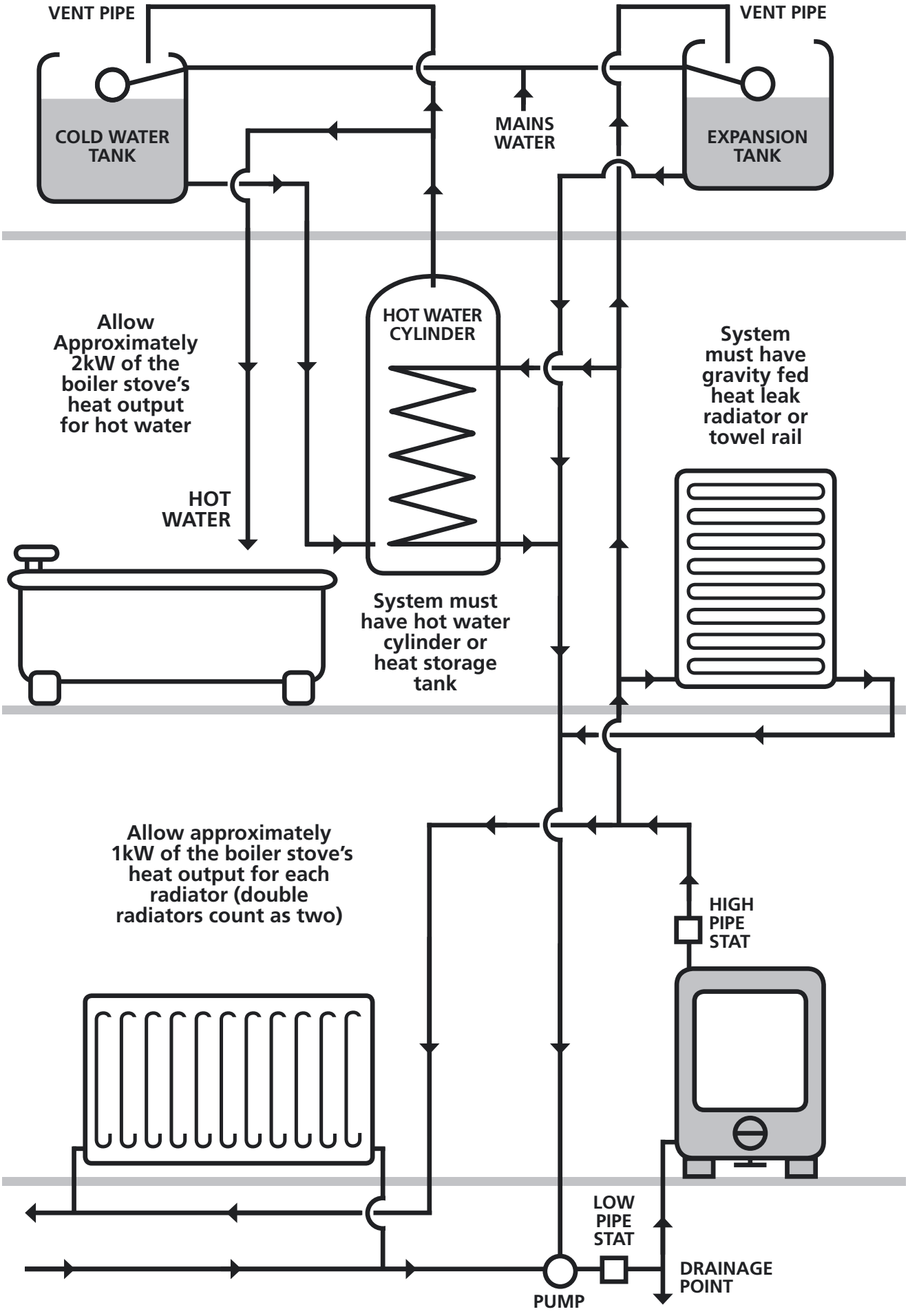
The basic system diagram on the opposite page should be used for general guidance purposes only and is included here to demonstrate basic system principles. Combined with the at-a-glance list below this should provide you with a basic understanding of the essential requirements your system should have. As each system and its requirements will vary the list below is by no means meant to be comprehensive.

A good system should adhere to the following:

- Adjustable flow circulating pump
- High and low limit thermostats
- Cold feed pipework must be minimum 22mm dia'
- Open vent pipework must be minimum 22mm dia'
- Overflow pipe must be 22mm dia' copper
- All pipework must be able to operate at above 100ºC
- Feed / expansion tank must be galvanised steel or copper
- Float valve should also be copper
- No automatic or manual valves on cold feed or open vent pipework
- Heat leak radiator fitted to gravity circuit
- Exposed pipework (eg lofts) must be insulated to prevent freezing
- Hot water cylinder and thermostat
- System should be capable of being completely drained

Heat leak radiator

A heat leak radiator with a minimum rating of 10% of the boiler's total output to water should be fitted to the gravity circuit. Heat leak radiators rated at approximately 2kW (6,800BTU) tend to be the norm in most systems. Pipes to and from the heat leak radiator can be reduced to 15mm diameter provided


VENT PIPE
VENT PIPE
COLD WATER TANK
MAINS WATER
EXPANSION TANK
Allow Approximately 2kW of the boiler stove's heat output for hot water
HOT WATER CYLINDER
System must have gravity fed heat leak radiator or towel rail
HOT WATER
System must have hot water cylinder or heat storage tank
Allow approximately 1kW of the boiler stove's heat output for each radiator (double radiators count as two)
HIGH PIPE STAT
LOW PIPE STAT
DRAINAGE POINT
PUMP

the run is no further than 300mm (12") away from the 22mm gravity circuit. No thermostatic or manually adjusted valves should be fitted to the heat leak radiator to ensure that it can never be shut down. If a thermostatic control over-heat valve, which controls the flow when the water in the hot water cylinder has reached a predetermined unsafe temperature, is specified as part of the system then you must ensure that the heat leak radiator has a rating to cope with the extra demands made on it when the hot water cylinder is isolated.

Adjustable circulating pump

It is important that the system flow can be adjusted via the circulating pump to ensure the best operation. A system flow which is too slow could potentially over-heat or at the very least take a long time to warm the house. One that is too fast could reduce the time it takes for the water pass through the boiler and absorb heat, thus reducing the overall effectiveness of the system. Ensure that isolation valves are fitted on either side of the pump to allow for easy pump maintenance and safe removal in the event of a fault. Allow a minimum of 1.5 metres (5') of static head and always follow the pump manufacturer's instructions. Electrical connections to the pump, like the stove installation itself, are subject to current Building Regulations.

Electrical connections

Electrical connections to the circulating pump, motorised valves or link-up components are subject to Building Regulations compliance and must be carried out by a qualified electrician or by a person registered with the appropriate Competent Person scheme. In England and Wales building regulations Approved Document P sets out the overall criteria and requirements to ensure electrical safety and have been introduced to help reduce the number of deaths, injuries and fires caused by faulty installations.

Mains water connection

In order to safeguard water quality and public health, when connecting the boiler stove heating system to the mains water you must ensure that the connection complies with all local water authority regulations. A legal duty is placed on all users, owners or occupiers and anyone who installs plumbing systems or water fittings to ensure that they are installed and used in accordance with UK Water Supply (Water Fittings) Regulations 1999.

Gravity circuit pipework

Motorised valves fitted in the gravity circuit pipework must be configured to revert to the open position should the power fail. In addition the hot water cylinder and heat leak radiator should be positioned as near to vertically above the boiler stove as possible and with sufficient height to encourage the natural flow. Any horizontal runs in this pipework should be inclined, again to encourage the natural flow.

High and low limit thermostats

A high limit over-heat thermostat set at 80ºC should be fitted to the gravity flow pipework and connected to the circulating pump so that should the system temperature exceed 80ºC then the pump will automatically be switched on. This safety precaution will ensure that the gravity circuit does not overheat. A low limit thermostat set at 45ºC should be fitted to the gravity return pipework and connected to the circulating pump. This should be set to come on when the water temperature reaches above 45ºC to begin the circulation process.

Hot water cylinder

This should be fitted with a thermostatic control valve which turns off the flow when the water in the cylinder has reached a predetermined temperature. If your boiler stove is part of a new heating system this is now a building regulations requirement. You must ensure that this water setting is not too hot to use, especially if there are children in the house. A temperature set at 60ºC or just slightly above is recommended. Please note that temperatures below 60ºC may encourage the growth of harmful bacteria such as legionella.

During commissioning, as the thermostat may not be accurate, it is important that after the system has been operating for at least three hours the hot water temperature is tested at the tap closest to the hot water cylinder to ensure that it will not scald children or the elderly who use it. It is important that the heat leak radiator is specified with a rating to cope with the extra demands made on it when the hot water cylinder is isolated from the system.

Thermostatic radiator valves (TRVs)

The UK's Domestic Heating Compliance Guide stipulates that any new heating system is temperature zoned. For properties with a floor area of less than 150m2 (which includes most UK homes) this can really only be achieved by incorporating TRVs. However, two radiators on the pumped central heating circuit should not have TRVs fitted, as they will be needed to allow any excess heat to safely dissipate should the over-heat thermostat switch on. Please note these radiators could become excessively hot and we therefore recommend that these two at least should be of the low surface temperature type to help prevent accidents.

System Balance

See the section on the importance of ensuring that your heating system is correctly balanced. An unbalanced system is inefficient and therefore costly to run. See page 26

FITTING INSTRUCTIONS

Fire Cement

Always read the Fire Cement manufacturer's instructions first. Prolonged contact with fire cement and skin should be avoided. Protective gloves and glasses should be worn when applying fire cement.

Care should also be taken to avoid unnecessary contact between the stove's surfaces and the fire cement as this could damage the paintwork. Any excess fire cement should be quickly removed before it hardens.

Fitting the flexible liner spigot plate

An outer flue spigot plate (or collar) is provided to fit to the top of stove if you are using an approved flexible liner which you should have already dropped inside the chimney.

Securely attach the liner to the spigot plate using self-tapping screws and the three pre-drilled screw holes in the spigot. Seal the joint with fire cement and / or fire rope before you finally position and fix it to the top of the inset boiler stove.

The spigot fits around the flue liner so that any potential creosote will run down the inside of the liner and then into the stove rather than cause a build-up on top of the stove bodywork which could eventually leak and cause an unsightly mess and possible fire hazard.

The spigot with the liner attached can then be easily bolted into place from inside the stove (see left) once the stove's baffle plate has been temporarily removed. See page 10

Back-filling the gap between chimney and the flexible lining with vermiculite should only be undertaken when the stove is securely fixed in its final position.

Insulating at the sides and back of the stove

If you are not using a chimney lining then any gaps at the back and sides of the stove and the fireplace aperture should be filled with non-combustible insulation material such as rockwool or vermiculite. This will not only improve the efficiency of the stove but also help avoid the potential build-up of combustible soot along the sides – this is an especially important requirement if you are not using a flue liner. Some installations may require you to do this by removing the stove baffle plate and feeding the insulating material through the stove flueway and then manipulating it with your hand so that it completely fills the voids at the sides and back of the inset stove.

Attaching the stove to the fireplace

There are two ways that the Alpha Inset Boiler stove can be secured to the fireplace or fire surround depending on the particular opening. To ensure that you create a firm and safe fix it may be appropriate to use both methods.

1 Base fixing

Firstly, remove the ash pan, log bar and firegrate. You will then see a pre-drilled hole in the centre of the base of the stove.

When using this fixing method, carefully push the insert into position, locating it precisely in the fireplace opening before marking the position of the drill hole on the hearth through the stove base. Allow for some compression of the rope seal at the back of the stove to ensure a good seal between the stove and the fire-place front.

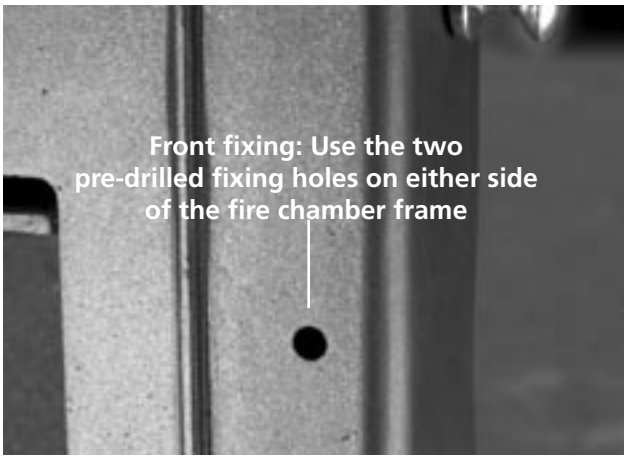
Remove the stove and then drill an 8mm diameter hole in the hearth. Fit the steel plug (or alternative) in the hole and carefully re-locate the stove. Fix the screw through base hole. Be sure to use the correct drill bit so as not to damage or crack any decorative hearth plate. *See below*

2 Front fixing

There are also two additional pre-drilled fixing holes on either side of the stove fire chamber opening that can be used to attach the stove to the fireplace (*see below)*.

Carefully position the stove within the fireplace opening and mark the two holes on to the fireplace front. Remove the stove and carefully drill the holes using the appropriate drill bit and insert the screw plugs. Re-position the stove and insert and tighten both screws.

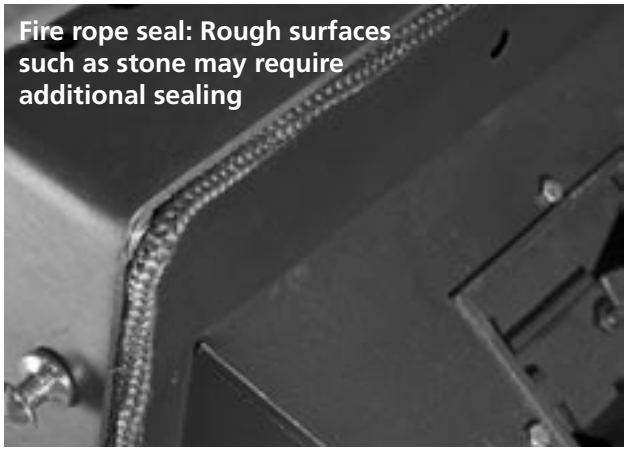
Remember, if you are fitting a liner then the liner, attached to the spigot, should already be dropped and positioned inside the chimney before the stove is fixed in place.



Creating an air-tight seal

You must ensure a good seal between the back of the stove and the face of the fireplace. This is especially important if you are not using a liner since any air leaks here could impair the performance of the stove and also render it unsafe.

Fire rope has already been attached at the back of the stove (allow for this in the base fixing method). Uneven surfaces such as stone may need additional sealing. The front fixing method will increase the security of this seal by drawing the stove tight against the fireplace face and this is therefore the preferred fixing methods when a liner is not used.



COMMISSIONING

1 Internal Parts

Confirm that all internal parts of the stove are correctly fitted, including the baffle plate.

2 Doors and Seals Confirm that the door closes correctly and that the door seals make an all round air-tight seal.

3 Smoke Test

When the installation is complete it is important that a final safety smoke test is carried out.

Fully open the Primary and Secondary Air controls, as well as the Thermostat Control, and warm the flue by using a blow torch, being careful not to let the flame damage any painted surfaces etc. After about 10 minutes of warming, quickly place an approved smoke pellet in the middle of the fire grate, light it, and close the stove door. Check the flue terminal to ensure sufficient smoke is escaping. Repeat this with the room doors (and any open windows) fully closed.

Remember, this stove should not be installed in the same room as an extractor fan. However, if there is an extractor fan in an adjacent room then this requires a separate test with the fan switched to full and the room door left open to establish the worst case scenario.

After completing a successful smoke test, then a spillage test should also be undertaken (see below).

4 Spillage Test

Boiler stove fire chambers operate at a much lower temperature than non-boiler stoves and therefore, in the interests of safety and to avoid any potential carbon monoxide (CO) leakage, it is critical that a spillage test is carried out by the approved installer.

Light the stove in the normal way (see pages 13 – 15) and make sure that the stove is at full operating temperature – this will be with a completely burning fuel load and could take around 30 minutes, however it cannot be rushed. Check that smoke or any other combustion products do not enter the room during this stage. Please see the note on paint fumes. See right – 'Important: First Fires'

Also ensure that the Primary and Secondary Air controls, as well as the Thermostat Control, are all fully operational.

4 System Balance

When the heating system is fully running after approximately 2 hours, the central heating system should be 'balanced'. See page 26

5 Safe Operation

Explain the safe operation of the stove to the user and the importance of using the correct fuel types. See pages 11 – 16

6 Legal Requirements Explain the householder's legal requirement to use an approved fireguard whenever children (or the elderly and the infirm) are likely to be in the vicinity of the stove. If the installation is in a designated Smoke Control Area then also explain the householder's responsibility only to use approved smokeless fuels.

7 Instruction Manual
Make sure that the customer receives this copy of the *Instruction Manual*

8 Warranty Card
Complete the relevant parts of the *Alpha Warranty Card* with your Hetas / INFO or competent persons registration number and contact details

IMPORTANT: FIRST FIRES

Use smaller and shorter 'gentle' fires the first five or six times that you fire up the stove, making these progressively bigger, as this will avoid any potential thermal shock and allow the cast iron components to 'acclimatise' with each other. Allow the stove to fully cool down between these fires.

When first using the stove it is normal to experience paint fumes or see light smoke rising from some of the stove's painted surfaces. During this stage ensure that the room has additional ventilation by opening doors and windows to minimise any adverse effects. The hotter you burn the stove the more intense these fumes will be, which is one of the reasons that we advise that you use smaller fires to start with. Every time the stove reaches a new higher temperature it may still be possible to smell these fumes or see some gentle smoke until the paintwork is fully cured.

If smoke and fumes persist do not use the stove and immediately consult your installer, as this may indicate that there could be a possible problem with the installation.

CONDENSATION

It is not unusual for condensation to form on a cooling boiler or pipework under certain atmospheric conditions. Such condensation should not be confused with a boiler leak. In the unlikely event of a boiler leak a profuse supply of water, which is usually hard to stem, will occur. This is significantly different from condensation which can be easily dried out with a sponge or by re-lighting the stove. Please refer to our Boiler Warranty terms and conditions on page 32.

SYSTEM BALANCE

With all wood burning and multi fuel boiler stoves, given their particular heat cycle and the natural gravity fed flow, it is extremely important that the radiators are balanced to ensure an efficient distribution of heat as well as an even heat balance from one radiator to the next. The idea is to reduce the flow to the hottest radiators so that more hot flow is available to heat the coolest ones. The system is 'balanced' when there is a good hot water flow through every central heating radiator.

To undertake this, all of the system valves should be set to open (including any lock shield valves (LSVs) on the heat leak radiator) and the circulation pump adjusted to the correct flow speed. Thermostatic radiator valves (TRVs) should also be set to maximum to ensure that these are not activated during the balancing process. All radiators should be fully bled of air and the system should be at full operating temperature. Please note it could take the system 2 – 3 hours, depending on the size of the system and the fuel loads, to reach full operation.

The objective is to get a consistent temperature difference of approximately 10ºC between the flow (80ºC) and the return (70ºC) on each radiator. If the circulating pump flow rate is set too high then the temperature drop between flow and return will be less than 10ºC. Balancing the system means adjusting all of the various thermostatic valves, thermostats, lock shield valves on each radiator and the circulating pump speed to give the desired temperature in each room for the least amount of fuel used. This can be a time-consuming process, but is well worth it, and therefore is best left to an experienced installer.

With the system at full operating temperature and all of TRVs fully open, if the temperature drop is different from 10ºC but consistent across all of the radiators then it will be a simple matter of adjusting the circulating pump flow to achieve the desired 10ºC drop. Slow down the pump flow to increase the drop difference and speed it up to reduce it. In reality it does not matter if some radiators have a slightly smaller temperature drop, hence a higher flow, so long as there is enough flow to get all of the radiators at a desirable temperature.

Fortunately, a balanced system does not mean that all of the radiators have to be set at the same temperature. How hot a radiator is once the thermostatic valve is operating will depend on many variables including the size of the, room, how high the TRV is set and how big the radiator is. Radiators are likely to be slightly hotter at the top than the bottom but this will vary from system to system and the design of the radiator itself. Provided the temperature difference from the top to the bottom of the radiator is no more than the 10ºC flow and return difference, then this is not generally an indication of a system problem.

TROUBLE-SHOOTING

CHIMNEY FIRE

If your stove has been installed correctly and you have also operated it correctly and regularly carried out the recommended routine checks then it is unlikely that you will ever experience a chimney fire, which can be highly dangerous.

Chimney fires can be detected by an unusual roaring sound and / or unusual vibrations coming from the chimney breast or the stove itself. The sound is not to be confused with the gentle 'rushing' sound you may normally hear when a stove has a well performing up-draught. You may also see sparks or flames exiting from the chimney terminal outside.

• ***Prevention***
If you suspect a chimney fire then immediately close the Primary and Secondary Air controls, as well as the Thermostat Control, evacuate the building and call the Fire Service. *Never* open the stove door as this will make the chimney fire worse by providing additional combustion air. Do not re-enter the building until you have been advised by the Fire Service that it is safe.

Do not re-light the stove until the flue system has been thoroughly inspected by an approved installer or chimney sweep and any necessary repairs have been carried out.

• ***Causes: Inadequate cleaning***
Chimney fires occur when soot and creosote have built up to such a level that they ignite. It is important therefore that your flue system has as many cleaning access points as practicable to enable comprehensive removal of soot, creosote and other debris. This will also minimise the amount of time it takes for a qualified sweep to clean the system making the system safer and its cleaning more cost-effective in the long run.

• ***Causes: Continuous low burning***
To discourage the potential for such soot and creosote build-ups, long periods of consistent 'slumber' or overnight burning should be avoided or that these should at least be compensated for by regular burning on full output for short periods (eg 30 minutes per day) to help burn off any likely deposits before they become problematic.

• ***Causes: Poor fuel choice*** As previously mentioned unseasoned or damp wood or fuel should always be avoided as these produce excessive soot and creosote. This is particularly problematic for boiler stoves where the fire chamber temperatures are much lower than in a non-boiler stove and therefore the potential to promote the conditions for dangerous deposits from damp fuel is much greater.

STOVE, FLUE OR OTHER COMPONENTS GLOWING RED

• ***Prevention***
The Primary and Secondary Air controls, as well as the Thermostat Control, should be immediately closed to let the fire die down to an acceptable level and to reduce the heat output which will in turn eliminate the glow from the over-heated components. At the same time ensure that water within the system is not 'boiling'. Your central heating system should have the requisite safety valves to prevent this, but if in doubt run off excess hot water and ensure the central heating pump is working to dissipate the excess heat and hot water. Over-firing is dangerous and could permanently damage or warp your boiler stove and its components. The effects of over-firing are fairly obvious to anyone in the stove industry and will invalidate your Alpha Warranty. Check the stove, the flue system and the central heating for any signs of damage or system failure before you re-use the stove.

• ***Causes: Over-Firing*** This is caused by using the stove at a higher output than recommended for prolonged periods of time and / or over-filling the firebox with fuel. The excessive heat in the flue system produced by over-firing could potentially also lead to a chimney fire (*See 'Chimney Fire' above)*. Ensure you are using the correct fuel load. See page 5

SMOKE AND FUMES ESCAPING INTO THE ROOM

When properly installed and operated your stove should not normally emit fumes or smoke into the room. When first using the stove it is normal to experience paint fumes or see light smoke rising from some of the stove's painted surfaces, but these should eventually pass as the paint cures. Occasional minor smoke escape may also occur during the refuelling process. However, persistent smoke or fumes could be dangerous and in this situation you should take immediate avoiding action.

• ***Prevention***
Open doors and windows to ventilate the room and let the fire go out to allow the stove to cool. Never pour water onto the fire as this could cause the cast iron components to break.

Most importantly, never re-light the stove until the problem has been identified and solved. If in doubt, in the first instance always seek the expert advice of your approved installer, or authorised Alpha dealer.

There are a number of factors, either alone or combined, which could cause such problems:

• ***Causes: A blockage*** When safe to do so, examine the flue-way above the baffle plate as well as the chimney system via any inspection hatches and clear any soot blockages. Excessive deposits could also indicate that the chimney or flue itself also needs cleaning.

• ***Causes: Inadequate supply of combustion air***
Check that any permanent air vent fitted to supply the extra combustion air required for the stove has not been accidentally blocked. Remember there should never be an extractor fan in the same room as a stove. A simple way of checking whether or not the stove is receiving enough combustion air is to open a window in the same room as the stove whilst the stove is operating. If this improves the problem then this would certainly indicate that the stove is being starved of combustion air and the advice of the original installer should be sought.

• ***Causes: Extreme weather conditions*** High winds or extremes of temperature can also temporarily affect the performance of the chimney draught and consequently its effectiveness in removing smoke and fumes from the stove's fire chamber. In the case of freezing temperatures it is important to build a larger pre-fire than normal to quickly provide the additional heat needed to warm the flue system and to counteract the much lower temperatures at the exit point of the chimney. This is particularly important for boiler stoves which have the disadvantage of the fire chamber being surrounded by very cold water.

Unusually hot sunny days in the Autumn can sometimes produce negative pressure which will affect the up-draught and in these instances you should open a window or door to the outside to help re-balance the interior and exterior pressures which create the up-draught mechanism. Once you are confident that the up-draught has re-started you can then close any doors or windows.

• ***Causes: High winds*** If the problem is associated with high winds and it becomes a regular occurrence, then you will need to fit a specialist chimney cowl. These are designed to provide a stable draught and prevent specific types of problems. Specifying the right cowl should always be left to an approved installer.

• ***Causes: Flue Exit*** Check, especially at the beginning of the heating season, that summer tree growth has not interfered with the free passage of smoke and flue gases from the chimney top.

OVERHEATING AND EXCESSIVE FUEL CONSUMPTION

This can be caused by a number of factors.

• ***Causes: Excessive Chimney Draught*** This limits the effectiveness of the air controls so that the fire burns with very strong bright yellow flames and with very little difference when the air controls are operated. In such circumstances, and where possible, an adjustable draught stabiliser in the flue system may need to be fitted to ensure that the stove will always operate under a stable draught to allow the stove's controls to function correctly. In the interests of safety, because draught stabilisers limit the exit of flue gases

from the stove, they should only ever be specified, fitted and subsequently tested by an approved installer.

• ***Causes: Fuel*** The fuel itself may be of poor quality. For example pine and other softwoods used in the building trade will burn much quicker than a good hard wood log, such as Oak.

• ***Causes: Faulty Door Seals*** The rope seals around the fire chamber door could have become worn and may not create the air-tight seal needed for the Primary and Secondary Air controls to function correctly. When the stove is cold, you can easily check this seal by placing strips of paper at various points between the door and chamber and checking that when the door is closed it grips this paper. Any paper which can be removed easily would indicate a weakness of the door seal in that particular spot, in which case a complete new rope seal should be fitted.

STOVE NOT PROVIDING ENOUGH HEAT

This problem is also usually indicated by dull orange lifeless flames and wood that remains black when burning instead of light grey.

• ***Causes: Poor fuel*** Poor heat output is more than likely caused by poor fuel, such as 'green' or unseasoned wood or even wet wood. We cannot over-estimate how critical it is to use fully seasoned dry wood in a boiler stove. The easiest way to check whether your wood is fully seasoned is to invest in a moisture meter specifically designed for testing wood fuel. These are relatively inexpensive and can be purchased from your stove dealer. When you bear in mind that seasoned wood with a moisture content of less than 20% will give you approximately 50% more heat than unseasoned wood, a moisture meter is a modest investment which will more than pay for itself.

Wet or unseasoned wood introduces unwanted moisture into the fire chamber, again, this is more problematic with boiler stoves which are already operating at a lower temperature because of the 'radiator' affect of the boiler. Wet wood reduces the boiler stove's fire chamber temperature and thus the effectiveness of the air wash system. In addition it will cause problems of increased soot and harmful creosote deposits within the flue system.

Softwoods such as Pine produce significantly less heat output than hardwoods.

• ***Causes: Air controls*** Ensure that you fully understand the difference that using the Primary, Secondary and Thermostat controls make to the performance of the stove and how they need to be balanced to determine the best way to burn your fuel.

• ***Causes: Inadequate Combustion Air*** A stove starved of combustion air, even when the Primary and Secondary Air controls are in the fully open position, will provide limited heat output. Check that any permanent air vent fitted to supply the extra combustion air required for the stove has not been accidentally blocked. Remember there should never be an extractor fan in the same room as a stove.

A simple way of confirming whether or not the stove is receiving enough combustion air is to open a window in the same room as the stove. If this improves the problem then this would certainly indicate that the stove is being starved of combustion air and the advice of the original installer should be sought.

• ***Causes: Blockages*** When safe to do so, examine the flue-way above the baffle plate as well as the flue liner or chimney system, either through the stove or via any inspection hatches. Clear any soot blockages. Excessive deposits could also indicate a poor choice of fuel or that the chimney or flue itself also needs cleaning more often than previously thought.

• ***Causes: Circulation Pump*** This may needs re-adjusting to slow down the system's flow because it does not provide the water with a slow enough passage through the stove's boiler to heat up the water sufficiently. This in turn prevents the fire chamber from ever reaching a good operating temperature. It could also be that the central heating system may need to re-balanced at the same time. See pages 22 and 26

GLASS STAINING OR BLACKENING

Glass can be cleaned easily if it is undertaken regularly and the deposits are not allowed to build up. A proprietary stove glass spray or gel is strongly recommended.

• ***Causes: Air Controls*** Ensure that you fully understand how the Airwash system works and that you have determined, through some trial and error that you have the correct balance between the Primary, Secondary and Thermostat Controls that your stove needs. Generally, try to use more Secondary Air when burning wood as this air flows down and over the glass to help burn and wash away any particulates that have accumulated there.

• ***Causes: Poor fuel*** Burning damp or unseasoned wood will cause the glass to stain as the moisture from the fuel considerably reduces the fire chamber temperature reducing the effectiveness of the Airwash system. 'Green' wood will also encourage sticky deposits on the glass which will prove difficult for the impaired Airwash system to remove.

• ***Causes: Continuous low burning*** Continuously burning your stove with a very low flame, such as slow overnight burning will also cause this problem because the Airwash does not get hot enough and some blackening of the glass should be considered a 'trade-off'. In this instance, if you're sure that the fuel

is seasoned and dry, then burning the stove at very high temperature for a short period after a long slow burn will usually burn off any sooty deposits. Glass can be cleaned easily if it is undertaken regularly and the deposits are not allowed to build up. A proprietary stove glass spray or gel is strongly recommended.

CONDENSATION IN THE FIRE CHAMBER

• ***Causes: Atmospheric conditions*** It is not unusual for condensation to form on a cooling boiler or pipework under certain atmospheric conditions. Such condensation should not be confused with a boiler leak. In the unlikely event of a boiler leak a profuse amount of water, which is usually hard to stem, will occur. This is significantly different from condensation which can be easily dried out with a sponge or tissue or by re-lighting the stove. After the fire has gone out, open all the air controls and leave the stove door slightly open, as this can sometimes help. Please refer to our boiler Warranty terms and conditions on pages 25 and 32 if you suspect a leak.

CENTRAL HEATING SYSTEM NOT PROVIDING ENOUGH HEAT OR HOT WATER

If you have ensured that the stove is functioning properly ie that it has vibrant yellow flames and is providing heat to the room, but still not delivering sufficient heat through the central heating radiators or hot water then it is more than likely to be a problem with the system. The simplest way to determine this is, if possible, to check that the top water pipe from the stove is hot and that the lower pipe is cooler. If this is the case then this indicates that there is a problem with the system and not the stove.

• ***Causes: Circulation pump or thermostatic valve failure*** A fault in one of the system's key components could restrict the system flow thus limiting heat to the radiators and / or hot water cylinder. For example, a thermostatic valve may have been activated due to a potential temperature anomaly or have stuck in the wrong position. Identifying the precise problem is a job best left to the original installer or heating engineer.

• ***Causes: Unbalanced central heating system*** With all multi fuel boiler stoves, given their particular heat cycle and the natural gravity fed flow, it is extremely important that the radiators are balanced to ensure an efficient distribution of heat as well as an even heat balance from one radiator to the next. If you have linked your new boiler stove to an existing or old system then it is likely that the system needs re-balancing to work in conjunction with your stove. See page 26

• ***Causes: 'Sludge' in radiators*** If you have linked your new boiler stove to an old central heating system and you have bled (and / or balanced) your radiators and there is still a lack of heat then the chances are that your radiators will be full of sludge. This is a thick black sediment which inhibits the flow of hot water. Your system will need flushing with the appropriate chemical agent. This can be a time-consuming and messy job and is best left to a plumber or heating engineer.

ROUTINE CHECKS

During routine checks if you notice anything wrong with your stove then it should be rectified immediately. Never use a stove that you know is not fully functioning – this includes flue components.

• Check your flue system at least once a month using one of the systems recommended inspection methods. After a few checks you will notice a pattern of soot build-up to enable you to determine the inspection and cleaning period best suited to your stove's operation.

• Check and clear the stove's baffle plate and flue way at least once a month. Lift and slide the baffle pate forward, drop down and remove. See page page 10

• Make sure the door maintains a good tight fit and visually inspect the door rope seals for fraying or other signs of wear. Test the seal if you suspect that it is no longer air-tight. See page 31

• Check that the glass is not chipped or cracked and that the glass sealing tape is still in good condition. Replace if necessary. See page 31

REGULAR MAINTENANCE

• **Baffle Plate and Flue Way** During the heating season check the flue way and baffle plate at least once a month to start with and remove any soot deposits. Should these be excessive then have your chimney and flue cleaned. At the same time review your choice of fuel and the way that you operate the stove. See page 10 'Removing The Baffle Plate'.

Regular long periods of slow or overnight burning can create excessive soot because the stove is not operating at the temperature required to burn off most of the sooty deposits. Damp or unseasoned wood will also have similar effect. To find a local registered sweep visit *www.guildofmasterchimney-sweeps.co.uk* or *www.chimneyworks.co.uk*.

• **Chimney Cleaning** The Alpha Inset can be swept through the stove by simply removing the baffle plate. The baffle plate can be slid forward and dropped down. See page 10 'Removing The Baffle Plate'.

Sweep your chimney before installation and then at the end of each heating season when you stand down your stove. Burning seasoned dry wood means that you will probably need to sweep every three months. The amount of soot deposits removed each time is a good indication of how often you should sweep and as you begin to understand your stove and the wood you burn you can adjust the cleaning intervals accordingly. If in doubt seek the advice of a registered chimney sweep who has experience of stoves.

• **Firebricks** There are no firebricks on the Alpha Inset Boiler stove.

• **Cleaning the Glass** Using damp or 'green' unseasoned wood, filling with small fuel loads or operating the stove at low temperatures (slow overnight burning) will reduce the effectiveness of the Airwash system and cause the glass to stain. Do not allow such staining to build up as it will become more difficult to remove after each firing. When used regularly, a proprietary scratch-resistant stove glass cleaning gel or spray, which can be supplied by your stove dealer, applied with a soft cloth, should be sufficient to keep the glass in pristine condition. Make sure the glass is cold before you apply such cleaners, as applying a cold solution to hot glass could create a thermal shock within the glass causing the glass to crack. Also make sure that all traces of the cleaning fluid have been removed and the glass is thoroughly dry as any residue can be 'baked' on causing unsightly smearing.

• **Replacing Glass** Never use your stove if it has cracked or missing glass. Your Alpha dealer can quickly supply you with a new piece of heat-resistant glass should you ever need it – just let them know the stove name and model number. Only use heat-resistant glass as this is made to withstand temperatures of up to 800ºC.

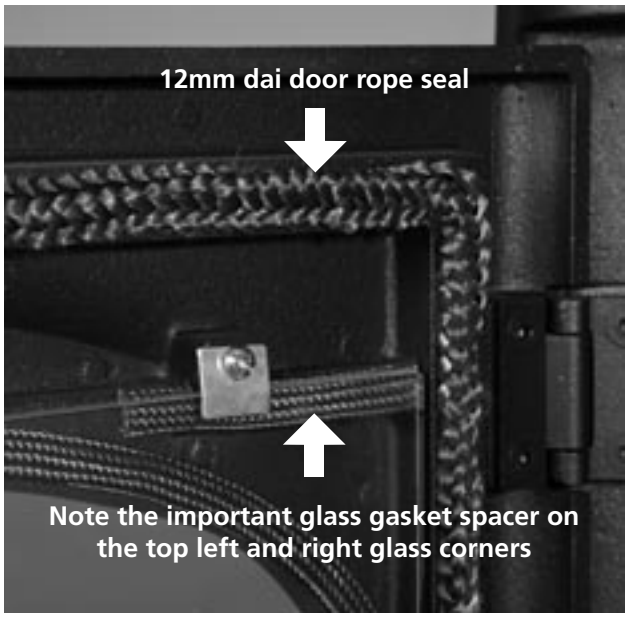
Remove the screws and glass clamp washers from each corner and place them in a safe place. Note the gasket spacers on the top corners. Do not attempt to re-tighten the clamps without these spacers. Always use the correct sized Phillips crosshead screwdriver and use releasing oil if the screws prove difficult to remove. Be careful not to dislodge the ribbon seal. If this is damaged or worn replace it completely. Loose ribbon can be held in place with rope seal glue available from your dealer. Lubricate the screws and holes and reverse the process, being careful not to over-tighten the screws and clamps in case you break the glass.

• **Paint Finish** Your stove has been finished with heat-resistant paint (except for enamelled models) and is very easy to maintain. Regularly remove ash and dust from surfaces with a soft cloth or brush. To maintain the original paint finish you can use traditional 'stove black' polish which your Alpha dealer can supply. Make sure the stove is cold and use protective gloves as this type of polish can cause deep staining to the skin and fingernails.

Repair worn or scratched surfaces with a proprietary heat-resistant spray paint made specially for stoves, also available from your stove dealer. Never use an aerosol spray on, or near, the stove when it is burning or it is hot.

• **Door Rope Seals** It is important that you maintain a tight door seal as this prevents unwanted air leaking into the fire chamber and helps make the Primary and Secondary Air more effective in controlling the fire.

When the stove is cold, to check the door stove seal, place strips of paper between the door and 'door frame' and shut the door. If you have to pull hard to remove these or they tear, then you have an effective door seal. If these can be easily removed or if they slide around you will need to replace the door seal. Your new Alpha stove is supplied with a spare rope seal for the door. To replace, carefully remove the old seal and completely clean the seal channel of debris and old glue. Use liberal amounts of proprietary heat-resistant fire rope glue to secure the rope and glue both ends to ensure a well-sealed joint.



The recommended rope seal diameter is 12mm.

• **Air flow through stove** The heat from your inset stove comes in the form of radiated heat from the hot castings and convection of hot air. This convection is achieved by the stove drawing colder air in through the two side air intake vents at the base, drawing and heating this through the back of the hot stove and then letting it rise out through the vents on the top of the exposed bodywork.

In order to maximise this convection process please ensure these airways are kept free. They may draw household dust into them and therefore they should be vacuumed regularly to help keep the air in the room dust free.

STANDING DOWN

There will be some point in the year when you will not need to use your stove for a considerable time and taking care to clean it thoroughly then will save you much time later. This is also a good time to get your chimney swept too as this will prevent any soot build up from falling inside the stove or 'caking' and blocking the flue way or flue system.

• Remove and clean any deposits from the top of the baffle plate and check for wear.

• Remove any debris and deposits from the inside of the stove particularly at the entrance to the flue way.

• Empty the ash pan and thoroughly clean out the ash pan chamber.

• Check all rope seals and replace damaged ropes that do not provide a good seal.

• Check the fire cement bonds around the liner joint and outer spigot plate. Remove any loose cement and re-seal.

• Check the firebricks and replace any that have become thin or worn.

• Check the grate for signs of wear. Excessive wear, such as grate bars or log retaining bars which are bent or warped, could be an indication of over-firing or using inappropriate fuels such as petroleum coke. Order genuine replacement components from your authorised Alpha dealer.

ALPHA WARRANTY

Your new stove has been CE tested in the UK to ensure that it meets strict constructional, performance and safety standards. It is not the responsibility of Alpha to ensure that the appliance is installed and operating correctly at the time of the installation.

Alpha offers the original retail purchaser a limited 5 year warranty. Claims under this warranty must be reported in the first instance to the dealer you purchased the stove from. All claims *must* follow this procedure.

Your stove is guaranteed against defects subject to the following conditions.

1 The stove must have been installed by an appropriately qualified installer and upon completion of the installation a certificate of compliance to local building regulations issued

2 The sales receipt or invoice must be kept as proof of purchase

3 The serial number of the stove must not be damaged or missing

4 You must not have used the stove to burn any of the prohibited fuels listed

5 The stove must have been continuously kept in a serviceable condition and you must not have allowed the stove to corrode

6 You must not have modified the construction of the stove in any way

7 The stove must not have been used for commercial purposes (eg rented or holiday accommodation, public bar, where the stove's operation could be subject to abuse)

Alpha guarantees that your product will be free from defective parts, materials and workmanship at the time of purchase by the original consumer for a period of 1 year for components (parts and labour), excluding consumable parts and 5 years for the bodywork casing, door and boiler (parts and 1 year labour).

The warranty does not cover parts deemed to be consumables. These include paint, firebricks, fire grates, vermiculite panels, smoke deflection plates (baffle plates), gaskets, rope seals and glass.

Alpha will repair or replace at its option any stove or stove part thereof found to be defective under these terms.

Limits of Warranty

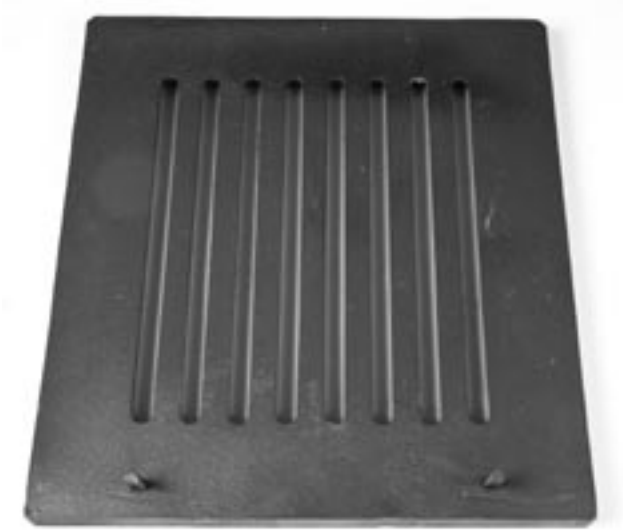
This warranty is not transferable and applies to the original retail purchaser only. It does not cover the failure of the appliance due to accidental damage, misuse or abuse, modification, illegal installation, repairs (other than those by the authorised dealer) or failure to maintain the stove in a serviceable condition.

Under no circumstances shall Alpha be liable for any incidental or consequential damage claims of any nature whatsoever arising from the non-conformance of the stove under the terms of the manufacturer's warranty. These include loss of profit, commercial losses, transport costs and damage during transport, costs in connection with any dismantling and reassembling of the stove and its installation components.

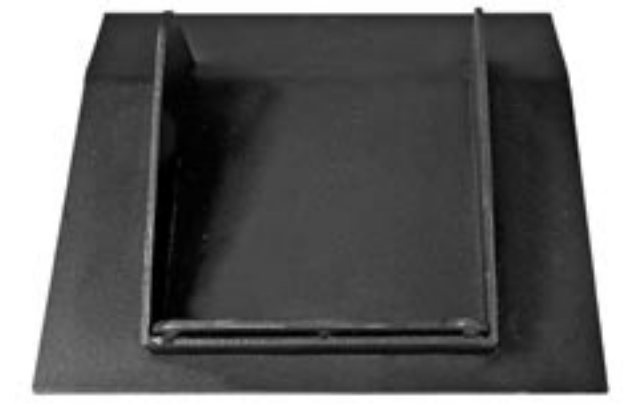
ALPHA SPARE PARTS

In the interests of safety, only ever use genuine Alpha replacement components. Once you have identified the component you need this will be readily available from your authorised Alpha dealer.

Log Retaining Bar



Fire Grate



Baffle Plate

ANNUAL SERVICE

In the interests of safety it is important that your Alpha Inset Boiler stove is serviced on an annual basis in accordance with the instructions outlined below. This should be carried out by a suitably qualified person such as your original approved installer, a Hetas or INFO registered installer or your authorised Alpha dealer.

When the stove is cold strip, clean and inspect it.

Internal Components Remove and inspect the following: Baffle Plate, Grate Assembly and Ash Pan.

Use a wire brush to clean the baffle plate and grate assembly. Carefully wire brush the inside of the stove which is essentially the outside of the boiler and remove all ash and debris from inside the stove and the ash pan chamber.

Check all parts for wear or damage and replace as necessary. Re-fit all the internal parts.

Stove Glass Check the glass for chips or cracks and the glass seal condition and replace if necessary. Thoroughly clean the stove glass on both sides.

Door Seal Check that this makes an air-tight seal and replace if necessary. Ensure that the new rope joint is also in the middle at the base of the rope seal channel

External Bodywork All external surfaces should be dusted with a soft cloth or light brush.

• Examine all paintwork for signs of wear and re-paint these areas using an appropriate heat-resistant black aerosol paint. *Warning: do not use the aerosol if the stove is alight or hot.*

• When the aerosol paint has dried, apply traditional stove black polish to all painted surfaces

• Lightly oil the hinges and locking mechanism

Air Controls When standing down at the end of the heating season these should be left in the open position to allow some movement of air which will help avoid condensation and moisture building up inside the stove and flue system. These can be closed up to 50% if it gets too draughty.

Liner Connection If a chimney liner has been installed then if possible check that the liner is secure and that the cement seal is still good. Repair any crumbling or failed seals.

Important In the interests of safety use only genuine Alpha replacement parts which are readily available from your authorised dealer.

NB It is advisable to have the chimney or flue system swept at the same time.

FIRST SERVICE

Date

Work carried out:

Next Service Due

Signed Print

Dealer's Stamp or HETAS Registration Number

SECOND SERVICE

Date

Work carried out:

Next Service Due

Signed Print

Dealer's Stamp or HETAS Registration Number

THIRD SERVICE

Date

Work carried out:

Next Service Due

Signed Print

Dealer's Stamp or HETAS Registration Number

FOURTH SERVICE

Date

Work carried out:

Next Service Due

Signed Print

Dealer's Stamp or HETAS Registration Number

FIFTH SERVICE

Date

Work carried out:

Next Service Due

Signed Print

Dealer's Stamp or HETAS Registration Number

SYSTEM NOTES AND SETTINGS

For future reference include a basic drawing of the system and notes on the circulation pump and system thermostat settings etc as well as their location and the location of the system drain point.

The ALPHA Collection

Alpha multi Fuel Stoves
Hi-Flame Fireplace (UK) Limited
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CW4 8AF
United Kingdom

www.hi-flame.com

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